THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. 86. NEW YORK, SATURDAY, FEBRUARY 11, 1905. No. 6.

SPECIAL ARTICLE.

REPORT OF A SPORADIC OUTBREAK OF TYPHOID FEVER AT LAWRENCE, N. Y., DUE TO OYSTERS.

BY GEORGE A. SOPER, PH.D.,

OF NEW YORK.

To the Board of Health of the Village of Lawrence, N. Y.

GENTLEMEN:—I have the honor to present herewith my final report on the investigation of a sporadic outbreak of typhoid fever in Lawrence and its vicinity in the summer, fall and early winter of 1904.

The total number of cases of which I have knowledge was thirty-one. There were three deaths. Nearly eighty per cent. of the cases occurred outside the limits of the village of Lawrence. None were due to any insanitary condition within your village. More than two-thirds of the cases were traced directly or indirectly to shellfish taken from water polluted with sewage.

The investigation was made with more than usual care, partly because of the fact that public statements had recently been made by apparently competent authorities to the effect that oysters cannot transmit disease, and partly because other theories existed as to the cause of the outbreak.

Now that the investigation is concluded, it is probable that the results may offer a partial explanation of sporadic typhoid which has occurred elsewhere. It is said that at least two hundred times as many oysters and clams were shipped away as were eaten in your vicinity. If this is so, it is possible that thousands of cases of typhoid fever may have been caused among the people who ate these oysters. At first sight one might think that so much typhoid from a single cause would promptly lead to the discovery of that cause. Further thought, however, shows that this would not be likely. Several thousand cases of typhoid could easily occur without drawing suspicion to these oysters and clams. The shellfish from this source are shipped to widely separated points—some are said to go to Europe. Three or four thousand cases of typhoid scattered among so many people, over so large an area, at a season when typhoid is expected to be more or less prevalent, would scarcely attract attention.

The eating of polluted oysters is so common an occurrence, and the autumnal incidence of typhoid is so coincident with it, as to make it the duty of your Board of Health to take cognizance of the possible connection between the two for all time in the future. All public health authorities should be equally alive to the danger to which your attention has been called.

THE REASONS WHICH LED TO THIS INVESTIGATION.

The reasons which led to the investigation here described arose from a knowledge that about a half dozen cases of typhoid fever had appeared in the corporate limits of Lawrence and that a larger number of cases had broken out in adjacent districts. The exact number of cases was not known, for, as is usual in the United States, the physicians had not been in the habit of officially notifying the health authorities of their typhoid fever patients, and there were, consequently, no accurate records.

Acting on the principle that typhoid fever points to insanitary conditions somewhere, and believing that the future health and reputation of the village required that the defective conditions, wherever they might exist, should be brought to light and corrected, your Board engaged the writer to make a thorough investigation of the matter.

POLICY OF THE LAWRENCE BOARD OF HEALTH WITH RESPECT TO PUBLIC HEALTH WORK.

It was seen at once that the inquiry, if thorough, would need to be carried on as much in other villages as at Lawrence, and some question arose as to the authority required for such work. Fortunately, the policy of the Board with respect to work outside the strict limits of its legal jurisdiction was clearly defined. In a matter which so seriously affected the health, not only of the people of Lawrence but of the large district of which Lawrence is a part, it was decided that village boundaries should be forgotten and, so long as no objection was made, the investigation should be pursued wherever it might lead. This policy had been established by the Board in its excellent work of eliminating mosquitoes.

TOPOGRAPHY AND OTHER CHARACTERISTICS OF LAWRENCE AND VICINITY.

The village of Lawrence is, in reality, part of a practically continuous settlement which extends from Rockaway Beach to Hewletts, a distance of nine miles, and from the ocean, or its inlets, to Jamaica Bay, a distance of from one-quarter to one and one-half miles. This peninsula projects diagonally from the mainland of Long Island into the ocean, as shown in Fig. 1. It varies in elevation from two to more than twenty feet above high tide. It is narrowest and lowest along the ocean front at Rockaway Beach and Arverne, and widest and highest at Lawrence.

The soil is composed of sand and gravel, and is admirably adapted for drainage. Broad meadows and innumerable creeks and coves run up into the land from the ocean and bay. The

average rise and fall of the tide is about six feet.

Notwithstanding the fact that the settlements on this long narrow strip are practically continuous, there are some similarities and differences among them which should be carefully noted. All are famous for their healthfulness. All are occupied the year round by a few residents and are particularly well patronized in summer. All are supplied with water by the Queens County Water Company.

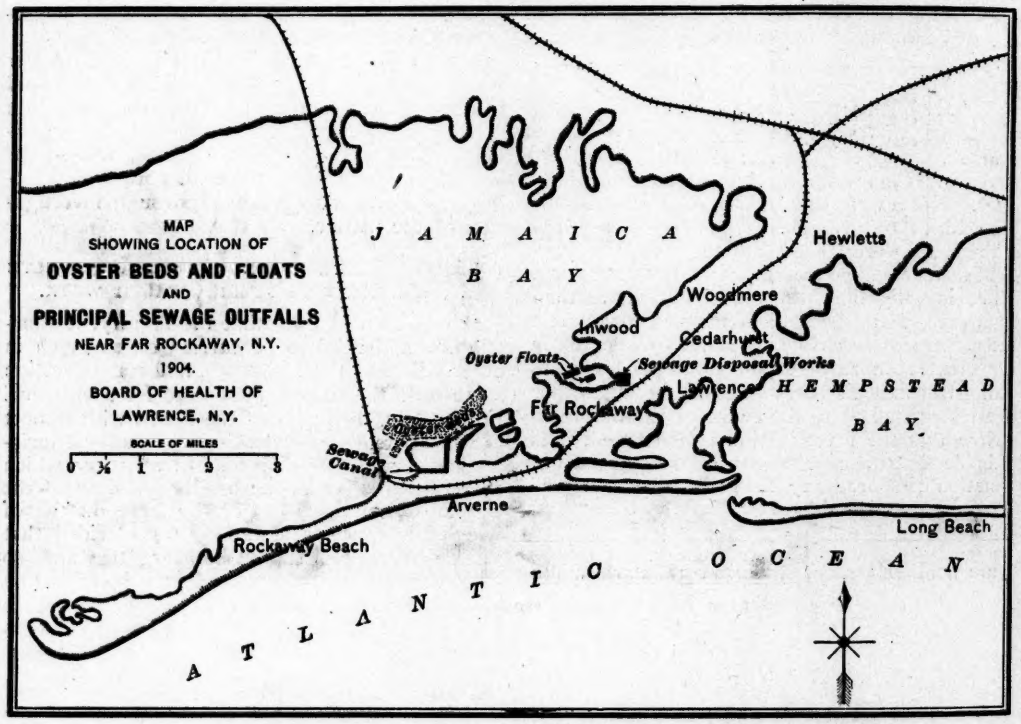
Rockaway Beach, at the west end of the line, is chiefly a day pleasure resort, resembling Coney Island. It is said that as many as 300,000 people have visited it in one day.

east. It is one of the most beautiful and wealthy residential villages on Long Island. The houses are large and have, as a rule, several acres of well-kept grounds about them. Lawrence has no public sewerage system. Most of the houses have private systems of their own. The total population of Lawrence is probably not over 500.

East of Lawrence lies Cedarhurst, partly occupied by tradespepole and partly by well-to-do residents, Woodmere, a new and rapidly growing residential district, and Hewletts, an older settlement which is being transformed into a summer colony.

Between Far Rockaway and Lawrence and to the north of them, lies Inwood, an unpretentious

Fig. 1.



Arverne, close to Rockaway Beach, is a summer cottage colony of about 15,000 people. The houses are closely built; the streets are well paved and lighted. There is a sewerage system, the sewage flowing into what is known as the Amsdell Canal which carries it into Jamaica Bay.

Far Rockaway has a population of at least 15,000 in summer. It also sewers into Jamaica Bay, but its sewage is first conducted to a chemical purification plant which is intended to remove all of the dangerous and objectionable properties of the sewage. The communities thus far named lie within the corporate limits of New York City, in the Borough of Queens.

Lawrence lies next to Far Rockaway on the

village, many of whose inhabitants earn a living from the oyster industries of Jamaica Bay. Inwood is the only community in this district which receives little if any drinking water from the water works of the Queens County Water Company. Most of the drinking water at Inwood comes from open wells situated in the backyards of the houses. There is no sewerage system. The village is closely built. One section is occupied by Italians and is extremely squalid. A garbage burning plant and the sewage disposal works of Far Rockaway lie close together near the border between Far Rockaway and Inwood, as shown in Fig. 2. The immediate territory about these works drains into the head of a creek, popularly known as the "Cove," and

designated on the charts of the United States Hydrographic Office as Nigger Bar Channel. Inwood has 2,500 to 3,000 inhabitants.

PREVIOUS HISTORY OF TYPHOID FEVER IN THE VICINITY OF LAWRENCE.

In order to ascertain the location of every case of typhoid fever which had occurred in and about Lawrence in the six months preceding this investigation, as well as to gain a knowledge of the history of typhoid in this locality in past years, an invitation was sent by the Health Officer of Lawrence to every physician practising between Hewlett's and Far Rockaway to attend an informal meeting for the discussion of this subject. Eight accepted, one being compelled to remain away to attend a patient.

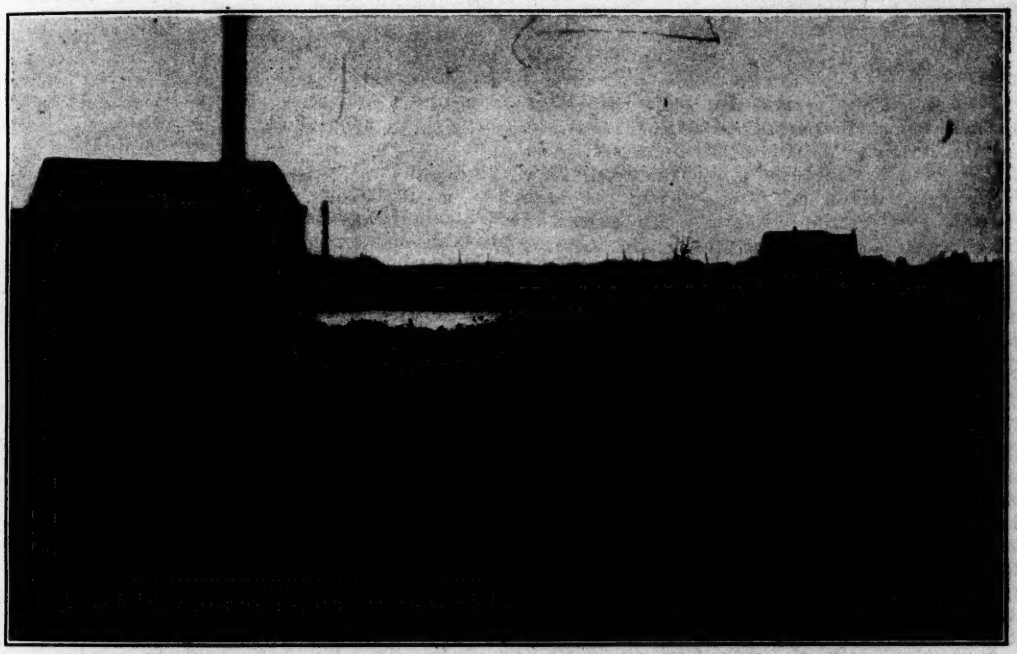
From the accounts of the physicians it appeared that typhoid fever was an unusual disease in the vicinity of Lawrence. The physicians ordinarily see no more than three or four cases in a year. Six or eight years ago, something like a prevalence of typhoid or malarial fever occurred at Far Rockaway. This outbreak was connected, in the minds of the physicians, with the construction of the public sewerage system, work upon which was hurried in anticipation of consolidation with New York City in 1898. In 1901 typhoid was less common; by 1902 it had disappeared.

THE RECENT SPORADIC OUTBREAK.

From the physicians' statements and my own investigations I have found that the number of cases which occurred between Hewlett's and Far Rockaway from June 1 to December 1, 1904, was thirty-one.

Following is a table showing the dates upon which the patients were taken ill. Usually the beginning of the attack was marked; a chill or severe headache signalled the commencement of the disease.

Fig. 2.



VIEW LOOKING TOWARD INWOOD FROM A POINT EAST OF SHERIDAN BOULEVARD.

The building in the near foreground is a garbage crematory. Beyond it is a pool of water adjoining the sewage disposal plant. All the drainage from this district passes into Inwood Cove.

TABLE NO. 1.—*Dates upon which the patients were taken ill.*

Date 1904.	Number of People Attacked.	Date 1904.	Number of People Attacked.
June 10	2	Oct. 12	1
" 12	1	" 15	1
" 14	1	" 24	1
Aug. 7	1	" 26	3
" 18	1	" 28	1
Sept. 1	1	" 29	2
" 10	1	" 30	1
" 11	1	Nov. 1	1
" 15	1	" 6	1
" 25	1	" 9	1
Oct. 3	2	" 13	1
" 11	1	" 14	1
		" 18	2
		Total....	31

The cases were for the most part widely separated in point of distance. Among the four which occurred in June, no two lived nearer together than one half mile in a direct line. Later on, as will be seen beyond, several cases occurred in one house. Considering the period from June 1 to December 1, the distribution of cases is shown in the following table:

TABLE No. 2.—*Showing Distribution of Cases.*

Locality.	Number of Cases.
Woodmere	1
Cedarhurst	3
Lawrence	7
Far Rockaway	8
Inwood	12
Total	31

It is practically certain that more cases than are here reported occurred at Far Rockaway during the summer. I have heard of several cases which were attended by physicians from New York City, whose addresses it has not been possible to ascertain. Cases are also known to have occurred at Arverne during the summer and several occurred at Rockaway Beach. Official confirmation of this statement can be found among the records of the New York City Department of Health at the Department headquarters in the Borough of Queens, Jamaica, L. I.

THE WATER, MILK AND FOOD SUPPLIES.

In the beginning of the investigation no single channel of infection seemed likely to prove common to all cases. Had the public water supply been infected a general epidemic would probably have resulted. Most of the attacks would have been among those who used the water. As it was, Inwood, where the use of the public water supply is not general, suffered more than any other district.

Still, for the sake of certainty, and in order to allay the fears of many persons, the public water supply was carefully examined. It was found that the Queens County Water Company supplied in the year ending January 1, 1904, a daily average of 1,904,812 gallons, the maximum being about 3,200,000 gallons, and the minimum about 800,000 gallons. There has always been enough water to supply the demand. No surface water has been used. The water is obtained from wells, many of them 160 feet deep, and driven through a thick layer of blue clay. The wells are situated in a practically uninhabited tract of land owned by the water company between Valley Stream and Hewlett's. The water, as it comes from the ground, contains a small amount of iron, and for this reason it is aerated and then filtered through what are known as natural, or gravity, filters. As some of the water is supplied to the people of New York City, it is analyzed every month by the chemists of the Department of Water Supply, Gas and Electricity. Through the courtesy of the Queens County Water Company, I am enabled to present the following results of analyses of the water before and after treatment for the removal of iron. The chemical results are stated in parts per million.

TABLE No. 3.—*Results of Analyses of the Water of the Queens County Water Company Before and After Filtration.*

Date of Collection Nov. 2, 1904.	Unfiltered.	Filtered.	Range since Regular Analyses were begun in 1898.
PHYSICAL EXAMINATION.			
Turbidity	5	0	....
Color	35	1	....
Odor	1	0	....
CHEMICAL EXAMINATION.			
Nitrogen as Alb. Ammonia.	.018	.010	.002-.11
Nitrogen as Free Ammonia	.020	.000	.000-.036
Nitrogen as Nitrites	.001	.000	.000-.005
Nitrogen as Nitrates	.05	.05	.000-.10
Total Solids	64.0	52.0	
Chlorine	5.0	5.4	.3-.4
Hardness	23.5	22.0	.8-.22
Alkalinity	8.0	8.0	
Iron	.95	.00	
BACTERIOLOGICAL EXAMINATION.			
B. coli in 0.1 c.c.	0	0	
B. coli in 1.0 c.c.	0	0	....
B. coli in 10.0 c.c.	0	0	....
MICROSCOPICAL EXAMINATION.			....
Standard units of microscopical matter per c.c. Organisms	200	000	....
Standard units of microscopical matter per c.c. Amorphous matter	600	000	....

Two facts are evident from the foregoing results of analyses: First, the water has been remarkably pure and satisfactory for a public supply; and, second, it has suffered no deterioration or alteration in quality from its usual high standard.

In the begining it seemed possible that some of the cases of typhoid fever might be due to milk which had become infected at its source or in handling. Inspections were therefore made of the dairies and bottling establishments to determine whether any channels of infection existed in this direction. None were found.

The sources of oysters and clams, as well as of celery, lettuce and fruit, all of which are commonly eaten raw and may carry the infective poison of typhoid fever, were too numerous to warrant separate investigation in the absence of any clue pointing toward them.

PLAN OF INVESTIGATION.

As the shortest and most feasible plan for determining the cause of the outbreak, I decided to visit the home of each person who had been

attacked by the fever and learn, if possible, to what channel of infection the patient had been exposed.

In this way I found that twenty-one of the patients had drunk the water of the Queens County Water Company; the rest had not tasted it. No milk supply was common to more than six. Two did not drink any milk or cream. Two drank waters which were not common to any other case. At least six patients had drunk no milk at all. Thirteen had eaten raw oysters within two weeks of their attack; one had eaten raw clams; one had handled fresh oyster shells; one had handled fresh clam shells. All the oysters and clams were from practically the same source. In addition to these sixteen cases, five cases could be explained on the ground of contact or comrade infection. Ten cases remain without an entirely satisfactory explanation; of these it is highly probable that three contracted their illness from oysters or clams and possible that one was made ill by bathing in the same water which infected the shellfish.

In addition to the thirteen whose typhoid is ascribed to oysters, it is important to note that three persons were taken with violent and continued diarrhea on three separate occasions following the eating of oysters from the source under suspicion. A fourth member of this same family, who also ate of the oysters became one of the typhoid fever victims already referred to.

These data can be conveniently arranged in the following manner:

TABLE NO. 4.—*Cases of Typhoid Fever Ascribed to Various Causes.*

CAUSE.	No. of Cases.
Eating infected oysters	13
Eating infected clams	1
Handling infected oyster shells	1
Handling infected clam shells	1
Due to comrade infection	5
Total cases satisfactorily explained	21
PROBABLE CAUSE.	
Eating or handling infected shellfish.	3
Bathing in infected water	1
Unknown	6
Total	31

Four of these six unknown cases occurred in June, five months before this investigation was begun, and were hence difficult to trace.

DETAILS OF EACH CASE ATTRIBUTED TO SHELLFISH.

An account of the most important items of evidence pointing to oysters and clams as the carriers of the contagium in the first sixteen cases, follows, the baymen being arbitrarily designated as A, B, C, etc.; the retail dealers as AA, BB, CC, etc.; and the milkmen by the Roman numerals I, II, III, etc.

Case No. 10.—Age thirty-seven years. Steam engineer in New York. Residence, Inwood. Taken ill September 11. Water from pump. Milk from I. at Inwood. Went out on Jamaica Bay, September 1, and ate oysters taken from the grounds of A, about one-half mile east of trestle on both sides of Grass Hassock Channel.

Case No. 38.—Age forty years. Residence, Far Rockaway. Taken ill September 15. Water from Q. C. W. Co., and private well. Milk and cream from III., Far Rockaway. Ate raw oysters about September 3. Obtained oysters from AA. at Inwood. AA stole them from a float at Inwood.

Case No. 12.—Age twenty-five years. Residence, Far Rockaway. Taken ill September 25. Water from Q. C. W. Co. Milk from II., Far Rockaway. Ate raw oysters, on or about September 18. Obtained oysters from BB. He got them from the floats at Inwood.

Case No. 24.—Age eight years. Residence since September 20, Inwood. Previously lived one-half mile away, also in Inwood. Taken ill October 3. Water from pump. No milk or cream. No oysters or clams were eaten in this family. Played with clam shells thrown out from CC.'s grocery, next door to patient's previous home, September 18 to 20. CC., the grocer, got the clams from B., a bayman, about September 15. B. took them from Grass Hassock Channel, Jamaica Bay, in part payment for labor for cleaning up grounds of S. B. stored his oysters and clams on various floats at Inwood, borrowing the privilege.

Case No. 4.—Age twenty-nine years. Residence since September 25, Lawrence. Taken ill October 12. Water from Q. C. W. Co. Milk and cream from IV., at Woodmere, and VII., at Lawrence. Ate raw oysters October 5, supplied by DD., of Lawrence. On October 4 DD. had received a consignment of oysters from C, at Inwood. C. had obtained them from his bed in Grass Hassock Channel and had stored them in his float at Inwood.

Case No. 14.—Age thirty-five years. Residence, Inwood. Mechanic. Taken ill October 15. Water from pump. Milk from V., at Inwood. Started for trip to Coxsackie, N. Y., on a sloop from Inwood, October 3, taking several bushels of oysters obtained from D. D. got the oysters from his float at Inwood and originally obtained them from his bed in Grass Hassock Channel, Jamaica Bay.

Case No. 14.—Age thirty-five years. Residence, Inwood. Taken ill October 26. Water from well. Milk from I., at Inwood. Had oysters from EE. and G., of Inwood. Oysters taken from floats at Inwood and originally from Jamaica Bay.

Case No. 32.—Age eleven years. Residence, Cedarhurst. Taken ill October 26. Water from Q. C. W. Co. Milk from III., at Lawrence. No oysters. Ate raw clams from FF., Cedarhurst, on October 14 or 15. FF. gets his oysters and clams from C., at Inwood. They come from C.'s float at Inwood and originally from Grass Hassock Channel, Jamaica Bay.

Case No. 13.—Age thirty-eight years. Residence, Far Rockaway. Taken ill October 28. Water from Q. C. W. Co. No milk. Oysters obtained from AA., October 14, who stole them from a float at Inwood.

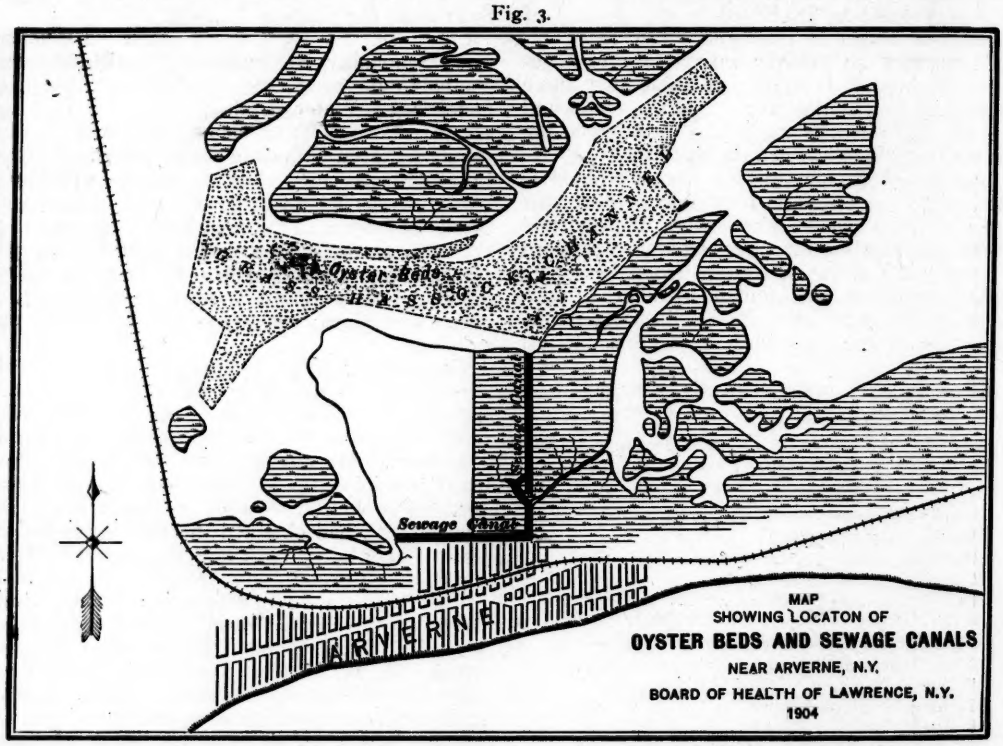
Case No. 9.—Age seventeen years. Residence, Inwood. Taken ill October 29. Water from Q. C. W. Co. Milk from V., at Inwood. Ate raw oysters October 15. Oysters supplied by E., from his float at Inwood. Oysters originally taken from Hassock Creek.

Case No. 5.—Age thirty-two years. Residence, Lawrence. Taken ill October 29. Water from Q. C. W. Co. Milk from VI., Lawrence. Ate raw oysters October 13, 20 and 27. Obtained

Case No. 31.—Age ten years. Residence, Far Rockaway. Taken ill October 30. Water from Q. C. W. Co. Milk and cream from VII., Far Rockaway. Raw oysters once a week from HH., Far Rockaway. Some oysters bought by HH. from JJ., Inwood. Some from KK., Inwood, about October 15. JJ. and KK. obtained their oysters from practically the same place, although JJ. probably stole theirs. KK. obtained his from D., his father. The father owns floats at Inwood and has a bed in Grass Hassock Channel.

Case No. 7.—Age thirty-four years. Residence, Woodmere. Taken ill November 1. Water from Q. C. W. Co. Does not drink milk. Ate raw oysters frequently from LL., Woodmere.

Fig. 3.



oysters from GG., a pedler. GG. obtained them from C., who supplied them from his float and took them originally from his bed in Grass Hassock Channel, Jamaica Bay.

Associated with this case are the three following cases of illness in the same family: 1.—, age seventy-six years, father-in-law of patient (*Case No. 5*); 2.—, age sixty-six years, mother-in-law of this patient; 3.—, age twenty-two years, wife of patient. All ate of the same lots of raw oysters on three successive Thursdays and each suffered for four to five days following with severe diarrhea and pain in the bowels. So convinced was this family that their illness was due to the oysters that they refused to buy any more from the peddler GG., who had formerly supplied them regularly.

LL. get their oysters from MM., Woodmere. MM. gets some from D., Inwood. These oysters came originally from D.'s bed near the trestle in Grass Hassock Channel, Jamaica Bay, and were floated in the cove at Inwood.

Case No. 15.—Age forty years. Residence, Cedarhurst. Taken ill November 6. Water from Q. C. W. Co. Milk from VIII., Cedarhurst. Ate a dozen raw oysters about October 25. Obtained the oysters from JJ. Oysters originally from Jamaica Bay and Inwood floats.

Case No. 21.—Age five years. Residence, Inwood. Taken ill November 14. Water from a well. Never had milk or cream to drink. Never eats oysters or clams; played with oyster shells thrown out by F., about November 1. Oysters brought home by F. from his laying at Inwood.

Case No. 34.—Age twenty-five years. Residence, Far Rockaway. Taken ill November 18. Water from public water supply of the Q. Co. W. Co. Milk from II., also IV., Far Rockaway. Ate raw oysters on October 29. Obtained oysters from HH., Far Rockaway. HH. gets some of his oysters from JJ., some from D., Inwood. Beds in Grass Hassock Channel, Jamaica Bay and floats at Inwood.

CHARACTER OF THE POLLUTION TO WHICH THE OYSTERS AND CLAMS WERE EXPOSED AT THE BEDS.

That the oyster beds which lie at the west end of Grass Hassock Channel are subject to sewage pollution is evident. The whole sewage of Arverne, which in summer has a population of about 15,000, debouches through two arms of a canal especially built to carry the sewage to the bay. The eastern arm of the canal was once cut off from the village sewer system by the construction of flood gates and an earth embankment, but these barriers are now out of repair and wholly ineffective. The water has worked its way around one of the abutments of the flood gates, and the gates themselves are wedged open with drift, so that the water runs either way through this former obstruction. Apparently to assist the draining of the meadows, a channel has deliberately been cut around the earth embankment, so that here, also, there is a free passage for the water where it was formerly shut off. At the present time there exists a canal, deep and wide enough for a steam launch, and about half a mile long, between the sewers of Arverne and the oyster beds as shown in Fig. 3.

Oysters taken from the beds of C. and A. on November 22, were subjected in the bacteriological laboratory to what is known as the "presumptive test" for the *Bacillus coli communis*.

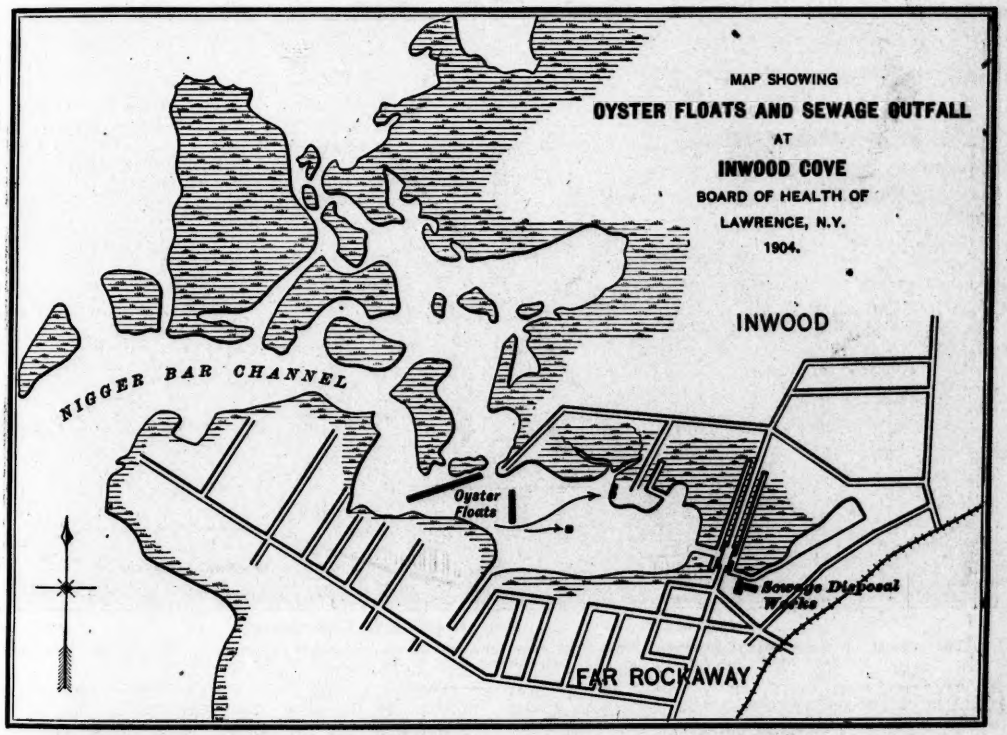
Results of Tests for the Presence of B. coli in Oysters from Grass Hassock Channel:

Sample No. 1.—In one-tenth cc. of the interior, negative; in one c.c., positive; in ten c.c., positive.

Sample No. 2.—In one-tenth c.c. of the interior, negative; in one c.c., positive; in ten c.c., positive.

The western arm of the sewage canal empties into a natural channel of Jamaica Bay which flows in a direct line towards the beds of D., about three-quarters of a mile away. Given favorable conditions of tide and weather, it seems impossible to escape the conclusion that all of the oyster beds in this vicinity, and especially those of the planters whose layings are situated near the outlets of the canal, have been subject to pollution from the sewers of Arverne. Cases of typhoid occurred at Arverne through the summer, and as we know that typhoid stools are seldom if ever thoroughly disinfected where public

Fig. 4.



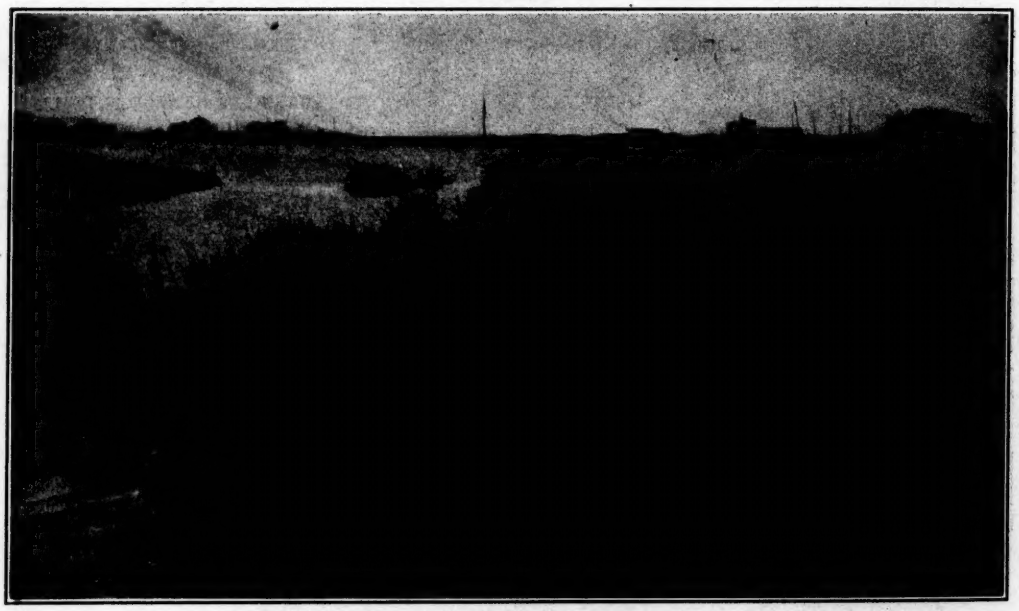
sewerage systems exist, it seems probable that this sewage has been occasionally infected with typhoid fever germs. This probability is increased when we consider the likelihood that some convalescents from typhoid fever were among the 15,000 visitors to Arverne. Typhoid convalescents are as dangerous as patients in the active stages of the disease, for they may give off for weeks and months, enormous numbers of typhoid germs in their urine.

There seems no room to doubt that the oyster beds near the outfalls of the Arverne sewage canals have been from time to time infected, and that Case No. 10 contracted his typhoid fever through oysters which he obtained and ate in this locality on September 1.

water of this cove for from twenty-four hours to many days. It is probable that 100,000 to 200,000 bushels are brought to this point every year from the beds in Jamaica Bay and ultimately shipped away for sale. The local consumption of oysters is comparatively small. The nearby retail trade is supplied chiefly by C. and D.

At high tide the cove is perhaps an eighth of a mile wide. From the floats to the head of the cove the distance is about half a mile. At low tide the water leaves the bed of the cove exposed and at this time the oyster floats are out of water. Only a thin stream winds toward them from the eastern end of the cove, where the sewage disposal plant of Far Rockaway empties its effluent. The nearest float to the sewage works

Fig. 5.



GENERAL VIEW OF INWOOD COVE FROM SHERIDAN BOULEVARD.

The effluent of the sewage disposal works empties into the creek in the immediate foreground. The oyster floats can be seen in the middle distance. On the extreme right is the dock where the oysters are landed.

POLLUTION OF SHELLFISH AFTER REMOVAL FROM THEIR BEDS.

The shellfish which came from Inwood were exposed to pollution at that place in an equally obvious manner. It is the custom among the oystermen to store the oysters which they bring from their Jamaica Bay beds in floats or cars which are located near the head of Nigger Bar Channel, otherwise known as the Cove, as appears from Figs. 4, 5 and 6. These floats are about 40 feet long, 15 feet wide, and one and a half feet deep. They are partly submerged, and are so built as to allow their contents to be covered by the water. The objects aimed at in putting the oysters in these floats need not be discussed here. It is sufficient for our present purpose to note that they are laid down in the

is that of C. For convenience, he has also a float-house on the shore, 100 yards away, as shown in Fig. 7. A little farther down the cove is the float of D., one of a group of five. The remaining 12 floats, including those of E., lie about 500 feet to the west. Nearby is the laying of F.

THE FAR ROCKAWAY SEWAGE DISPOSAL PLANT.

Aside from the sewage disposal plant which I have described, the cove was polluted from other quarters. A few rods to the east of the sewage works is a garbage burning plant which drains into the creek. A settlement of several score of Italians lies close at hand. To the north of the sewage plant, and draining directly into the cove, is a pile of many hundred loads of manure and

other filth. To the west, on the shore and easily reached by very high tides in the cove, are three loads of sewage sludge apparently taken from some cesspool.

The sewage disposal plant whose effluent empties into the water in which the oysters and clams are floated at Inwood is of comparatively recent construction, having been erected to purify the sewage collected by a sewerage system which was built at Far Rockaway in 1896 to '97. Theoretically the process is simple enough, but in practice considerable skill is required to operate it satisfactorily. The sewage is passed through a series of basins in which the impurities are supposed to be precipitated by the use of chemicals. The chemicals employed are chloride of iron and lime. They are added in solution, in small streams as the sewage enters the tanks and form hydrate of iron and chloride of lime. This is supposed to precipitate the impurities to the bottom of the tanks. The tanks are occasionally emptied and their accumulations dumped upon the meadows, after more or less disinfection.

TABLE No. 5.—*Analyses of the Affluent and Effluent of the Municipal Sewage Disposal Oyster Floats at Inwood, N. Y.*

Date and place of Collection of sample.	Nov. 30, 1904. Affluent.	Nov. 30, 1904. Effluent.
PHYSICAL EXAMINATION.		
Turbidity	89	75
Color	45	37
Odor	4d	3d
CHEMICAL EXAMINATION.		
Nitrogen as: Alb. ammonia in suspension	1.600	.800
" " solution	1.400	1.200
" " total	3.000	2.000
Free ammonia	13.000	17.400
Nitrites	.000	.000
Nitrates	.00	.00
Chlorine	90	104.
Hardness	75.	75.
Alkalinity	99.	99.
Iron	2.80	.75
Total solids	352.0	340.0
BACTERIOLOGICAL EXAMINATION.		
Number of bacteria per c.c. developed in forty-eight hours at 20° C.	5,240,000	7,320,000
Bacillus coli: In 0.10 c.c.	Positive	Positive
In 1.00 c.c.	"	"
In 10.00 c.c.	"	"
MICROSCOPICAL EXAMINATION.*		
Total microscopical organisms	15,000	12,500
Amorphous matter	5,200	3,650
Important genera Mold Hyphae	1,200	1,000
Paramecium	3,750	2,500

* Number of standard units per c.c.

When I visited the plant on November 26, there was only a small stream of chloride of iron being added to the sewage. The lime solution was not being used. I was told that on Sundays and holidays, lime was not employed because the chemist was away on those days. The efficiency of the plant under these circumstances being practically nil, it follows that on Sundays and on holidays crude sewage from the whole of Far Rockaway has been emptied into the cove at Inwood.

A second visit was made to this plant on November 30, for the purpose of taking samples of the sewage as it entered and left the plant. The process of purification was said to be in normal order. The chemical and biological analyses of these samples follow. The chemical results are stated in parts per million. (Table 5.)

TABLE No. 6.—*Analyses of Water Collected Near the Outlet of the Municipal Sewage Disposal Plant at Far Rockaway and Near the Oyster Floats at Inwood, N. Y.*

Date and place of Collection of sample.	Nov. 30, 1904. Near sewage Plant.	Nov. 30, 1904. Near Oyster Floats.
PHYSICAL EXAMINATION.		
Turbidity	12	3
Odor	13	11
Color	2d	1u
CHEMICAL EXAMINATION.		
Nitrogen as: Alb. ammonia in suspension	.200	.010
" " solution	1.000	.120
" " total	1.200	.130
Free ammonia	9.800	.140
Nitrites	.280	.006
Nitrates	1.45	.05
Chlorine	464.	15,750.
Hardness	207.	5,300.
Alkalinity	49.	97.
Iron	1.20	1.20
Total solids	1,033.	25,712.
BACTERIOLOGICAL EXAMINATION.		
Number of bacteria developed per c.c. after forty-eight hours at 20° C.	600,000	12,850
Bacillus coli: In 10.00 c.c.	Positive	Positive
In 1.00 c.c.	"	"
In 0.10 c.c.	"	"
MICROSCOPIC EXAMINATION.*		
Total microscopic organisms	395	50
Amorphous matter	2,500	250
Important genera Mold Hyphae	250	0
Paramecium	75	0
Navicula	0	30

* Number of standard units per c.c.

The foregoing results show that while the chemical composition of the sewage was somewhat improved by passing through the disposal works, the number of bacteria were increased. This increase was nearly forty per cent. Colon bacilli were found as readily in the effluent as in the affluent. The odor of the sewage was reduced only 25 per cent., the color less than 18 per cent., and the turbidity less than 16 per cent. The amount of microscopic organisms of a much larger size than the bacteria were reduced sixteen per cent. The amorphous matter, as determined by the microscopical examination, was re-

duced 29 per cent. Taken as a whole, the results show that the improvement in the sewage was slight; the change was not greater than would have been produced, in all probability, had the sewage been allowed to pass through the settling basins without the addition of chemicals.

If the results of the analysis of the output of this plant is compared with the results of the analysis of the water of the Queens County Water Company, as given on page 244, it will be seen that the effluent of the sewage works was of a dangerous character. It is true that the sewage was diluted and purified to some extent after it was discharged into the cove, but the quantity of sewage was so large as compared to the quantity of the diluting water, particularly at low tide, and the distance to the oyster floats was so short, that the improvement must have been uncertain in amount.

RESULTS OF ANALYSES OF WATER AND OYSTERS AT THE FLOATS.

It seemed desirable to obtain information as to the quality of the water at the floats themselves, and to this end samples of water were taken at several points in the cove and carefully analyzed. To approach still closer to the point which it was desired ultimately to determine, specimens of oysters were taken from the floats at the same time. The oysters were collected from such of the 17 floats as would give a fair indication of the purity of them all. On the day when these samples were taken the conditions were unfavorable for finding evidence of sewage pollution. The winter population of Far Rockaway is much smaller than the population at the time when the oysters and the clams must have been infected and the quantity of sewage was correspondingly less. The tide was beginning to run up from the bay toward the sewage disposal plant. The chemical results are stated in parts per million. (Table 6.)

TABLE No. 7.—*Analyses of Specimens of Oysters Taken from the Floats at Inwood, on November 25 and 30, to Determine Their Condition. The Oysters Were Examined Inside and Outside for the Presence of Bacillus Coli.*

Owner.	*Bacillus coli.* Inside the shell.			Outside of shell.		
	0.1 c.c.	1.0 c.c.	10 c.c.	0.1 c.c	1 c.c.	10 c.c.
D.	0	+	+	0	+	+
D.	+	+	+	+	+	+
C.	0	0	+	0	0	+
C.	0	+	+	0	0	+
G.	0	+	+	+	+	+
A.	0	+	+	+	+	+
J.	0	0	+	+	+	+
K.	+	+	+	+	+	+
L.	0	0	+	+	+	+
H.	0	0	+	+	+	+
F.*	—	—	—	0	0	+

* Shells from the yard where Case No. 21, D., played. These shells had been exposed to the weather several weeks from the time they were thrown out to the time when they were examined.

These results show that the water near the sewage plant was grossly polluted; that it was markedly better near the oyster floats, but that even in this locality, under the favorable condition of an incoming tide, it bore unmistakable evidence of pollution. (Table 7.)

These results show that 20 per cent. of the oysters were certainly polluted on the inside, and 70 per cent. on the outside, according to the standards now generally adopted by sanitary experts. The evidence is conclusive on this point. In addition, the results of the examinations indicate that 60 per cent. were probably polluted on the inside and 80 per cent. on the outside.

SUMMARY.

Regarded as a whole, it would probably be difficult to find a more unsuitable spot in which to place oysters intended for consumption than the waters of Inwood Cove. The place is so obviously a catch-all for unwholesome drainage and miscellaneous filth, that it is surprising the oystermen themselves have not been alive to the dangers of the situation.

I believe the conditions found here and in the bay fully warrant the opinion that not only have the oysters and clams taken from these waters been unsafe to eat, but their shells have been dangerous to handle.

In my judgment, the pollution of Jamaica Bay by the sewage of Arverne, and of Inwood Cove by the sewage of Far Rockaway, and other unwholesome drainage, have caused, directly or indirectly, 21 of the 31 cases with which this investigation has been concerned.

DETAILS OF THE CASES OF TYPHOID WHICH WERE DUE TO OTHER CAUSES THAN SHELLFISH.

Although the investigation was closed before all of the remaining cases could be conclusively studied, there is reason for believing that the following patients were made ill in the manner now to be specified in each instance. The first five, it will be observed, are ascribed indirectly to shellfish.

DETAILS OF FIVE CASES OF CONTACT, OR COMRADE INFECTION.

Case No. 18.—Trained nurse. Residence, Lawrence. Taken ill August 18 and died. This woman had been in attendance upon Case No. 17, and undoubtedly contracted the fever from the infectious matter given off by this patient.

Case No. 21.—Age forty years. Laundress. Residence, Lawrence. Taken ill October 24. Washed bedding and linen from Case No. 1. Contracted the fever on this visit.

Case No. 25.—Age thirty-two years. Residence, Inwood. Taken ill November 9. Visited the house of Cases No. 24, No. 22 and No. 23, to carry food and help to this destitute family. Contracted the fever on this visit.

Case No. 22.—Age twenty-nine years. Residence, Inwood. Taken ill November 13. Mother of Case No. 24. Contracted the fever while nursing her daughter.

Case No. 23.—Age six years. Residence, Inwood. Taken ill November 18. Sister of Case No. 24. Contracted the fever from her sister.

DETAILS OF TEN CASES CONCERNING WHOSE ORIGIN THERE WAS DOUBT.

Case No. 27.—Age thirteen years. Residence, Inwood. Taken ill June 10. Water from pump. Milk from private cow. No oysters, clams or shells apparently associated with this case. On May 30, Decoration Day, took a bicycle ride to Lynbrook, visiting a cemetery and attending a large meeting at a race track.

Case No. 29.—Age fifty-two years. Residence, Inwood. Taken ill June 10. Water from Queens County Water Company. Milk from IX, Inwood. Had friends to dinner on May 30 and probably ate raw clams.

Case No. 16.—Age sixteen years. Residence, Lawrence. Taken ill June 12. Water from Queens County Water Company. No milk, cream, oysters or clams apparently associated with this case. On May 30 took long walk on meadows with a dog, throwing the dog frequently into the water, thus possibly wetting hands with infected sewage.

Case No. 17.—Age forty-five years. Residence, Lawrence. Taken ill June 14. Water from the Queens County Water Company. No further information obtained concerning this case.

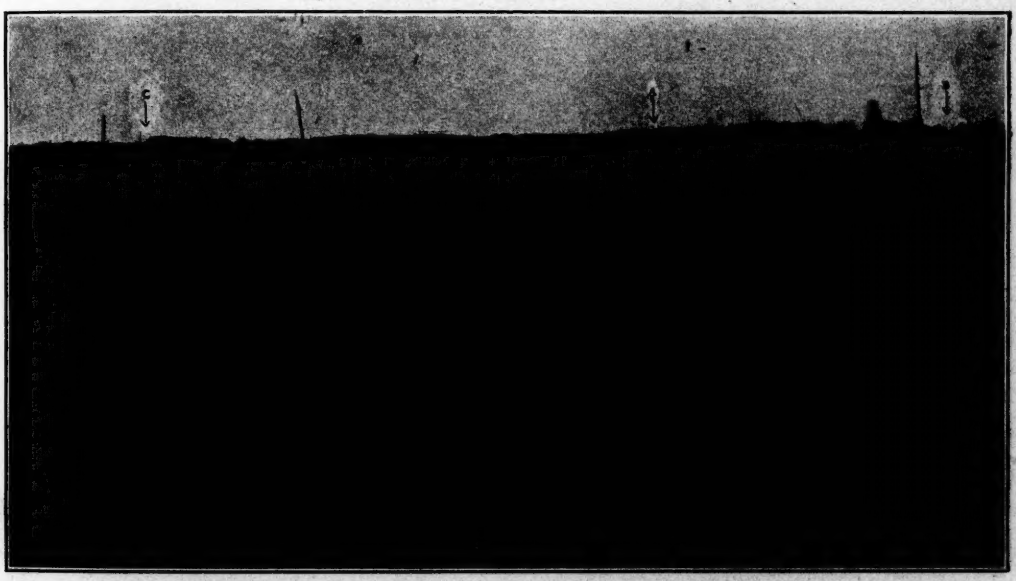
Case No. 19.—Age twenty-five years. Residence, Far Rockaway. Taken ill August 7. Water from Queens County Water Company. Milk from V, Far Rockaway. One of a party of four at a clam bake about August 1. Clams bought from boys on the street who probably obtained them from Inwood.

Case No. 26.—Age fifteen years. Residence, Inwood. Taken ill Sept. 1. Water from well. No milk, cream, oysters or clams apparently associated with this case. Bathed in Inwood Cove.

Case No. 1.—Age thirty-five years. Residence, Cedarhurst. Taken ill September 10. Water from Queens County Water Company. Milk from IV, at Hewlett's. Visited Inwood, Lynwood, Far Rockaway and Rockaway Beach occasionally on his bicycle.

Case No. 3.—Age twenty-three years. Residence, Far Rockaway. Taken ill October 3. An intemperate man. Refused all information concerning his habits.

Fig. 6.



VIEW OF INWOOD COVE LOOKING TOWARD THE SEWAGE DISPOSAL WORKS.
The works occupy the long low building marked A; an oyster float belonging to C. is marked B; a float-house on shore belonging to C. is marked C.

Case No. 11.—Age twenty-six years. Residence, Far Rockaway. Taken ill October 11. Water, at home, from Queens County Water Company. Milk from V, Far Rockaway. Cream from X, Far Rockaway. Does not eat oysters or clams. Takes luncheons at Jamaica, L. I., where typhoid fever was more than usually prevalent.

Case No. 6.—Age twenty-two years. Residence, Lawrence. Taken ill October 26. Water at home from Queens County Water Company. Milk from IV, Hewlett's. Had no oysters or clams at home. Luncheons taken in New York City. Went on hunting expedition to Eastport, N. Y., October 15 to 20.

RECOMMENDATIONS FOR THE PREVENTION OF TYPHOID IN THE FUTURE.

The history of Lawrence and its vicinity indicates that this region has been remarkably free from typhoid fever in the past and there seems reason to believe that, with ordinary care, it can be kept equally free from typhoid in future. The Rockaway peninsula is naturally healthful. The attention given by your Board to the recent sporadic outbreak should be taken by the people as an indication that sanitary questions are being carefully looked after and that public health in this vicinity will, for this added reason, be more than ordinarily secure.

At the same time, it must not be forgotten that typhoid fever is a disease which is more prevalent throughout the whole country than is commonly understood. It is often very difficult to diagnose and is frequently called by names which do not suggest its infectious character. If any community wishes to exclude it absolutely, it will be necessary to exercise careful supervision over a number of matters which generally receive little or no attention.

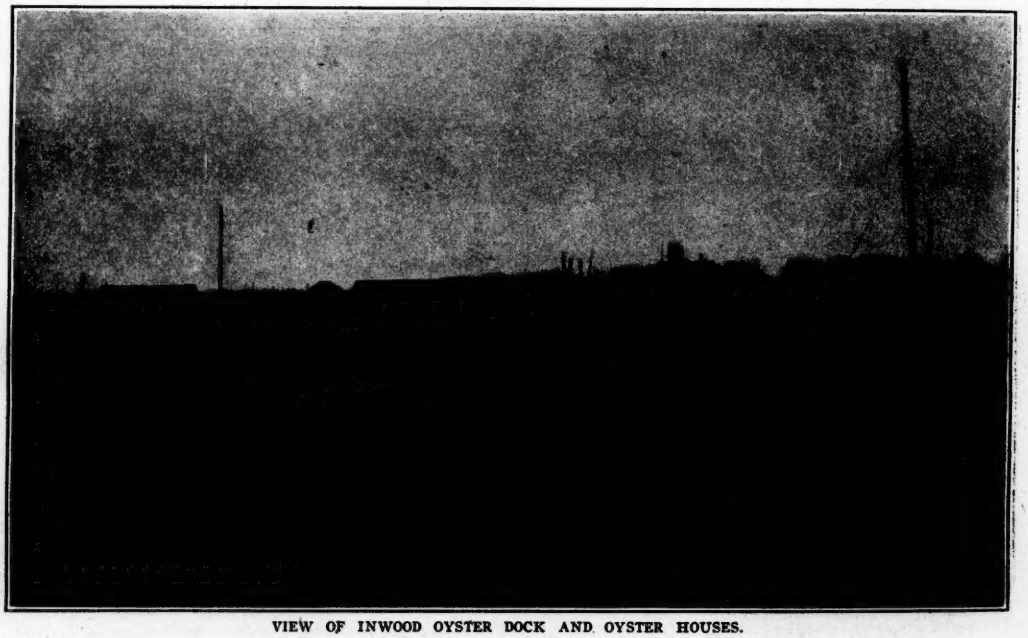
The greatest security for the future can be obtained if you will secure a notification of the cases which occur in the villages in your vicinity and exercise a supervision over your supplies of water, milk and shellfish.

Notification of Cases.—Physicians can be required by law to report their cases of typhoid fever to the local board of health which has jurisdiction over the territory in which they practise, and in this manner you can learn of their returns. I think a better way, however, would be for your Board to request the physicians who practise between Hewlett's and Far Rockaway to keep you informed of their cases as a matter of courtesy and for the public good. In return for their trouble you could well afford to offer the doctors free examinations of such specimens of blood and urine as they would care to send you for the readier diagnosis of their doubtful cases of typhoid. Such laboratory examinations are of inestimable value and boards of health in many of the larger cities make them gratuitously for the physicians. An accurate reporting of all cases of infectious and contagious diseases lies at the foundation of all good work in public sanitation.

The Water Supply.—The water supply of the Queens County Water Company is now of pure and satisfactory quality and will doubtless always be kept so. In order that you may keep informed of its quality, you are advised to arrange for a copy of the regular monthly analyses which are made of this water by the Department of Water, Gas and Electrictity of New York City and to request the company to inform you of any changes in the construction or operation of its plant which may, by any possibility, affect the quality of the water.

The Milk Supply.—The milk supply of your village, while not responsible for the recent cases of typhoid fever, has been found by inspection to be capable of improvement. It will not be possible to bring about ideal conditions at once, without severe hardship to the small producers

Fig. 7.



VIEW OF INWOOD OYSTER DOCK AND OYSTER HOUSES.
The sewage disposal plant is in the middle distance.

and dealers, but a long stride toward the ultimate result can be made if the following simple requirements be insisted upon:

1. Require the milkmen to follow honestly the fifty dairy rules published by the Bureau of Animal Industries of the United States Department of Agriculture.

2. Do not allow the milkmen to bottle milk or wash, cool, air, or otherwise handle receptacles for milk in any dwelling house or barn, or within fifty feet of a dwelling or barn, privy or manure pile.

It is much better to have a separate building for the handling and bottling of milk and to have the water used for cleaning the receptacles brought from a distance in pipes. Wells situated in the back yards of houses or near stables should be analyzed, and if good, carefully protected against pollution.

3. Require the milkmen to sterilize by live steam or boiling water all bottles used for milk distribution.

4. Never allow a bottle or can of milk to be left at a house where there is a case of contagious or infectious disease. The milk should be emptied into a pitcher or other receptacle provided by the housekeeper.

5. Do not allow a case of infectious or contagious disease to remain in the house of a milkman. Either the patient should be removed from the premises or the milk business temporarily taken to another quarter.

Oysters and other Shellfish.—Your board has as much legal right to regulate the purity of shellfish as to regulate the purity of milk. One is quite as important as the other. It is, in fact, your duty to exclude from sale in the village over which you have jurisdiction, all oysters, clams and other shellfish which are liable to cause disease.

I positively believe you will find small difficulty in accomplishing this end if you will act with firmness, moderation and tact. It is to the interest of honest oystermen to afford you opportunities for inspecting their methods of cultivating and handling the shellfish and taking samples of the same for analysis.

In the event of your finding shellfish which are unsuitable for food in your territory, you have the legal right to forbid its sale, and if necessary, destroy it without any compensation to the owners.

Under the circumstances which exist at present, I think you would be justified in excluding from the village of Lawrence all oysters and other shellfish which have been taken from Jamaica Bay within the influence of the Arverne sewers or from the Cove at Inwood which receives the sewage of Far Rockaway.

Respectfully submitted,

GEORGE A. SOPER, Ph.D.,
Consulting Sanitary Engineer.

December 17, 1904.

ORIGINAL ARTICLES.

HEMATURIA AS A SYMPTOM OF HYDRONEPHROSIS. NEPHRECTOMY. CURE.

BY L. BOLTON BANGS, M.D.,
OF NEW YORK.

HAVING had considerable experience with hematuria due to various forms of renal disease, and never having met with a case similar to the one which I shall presently report, it seemed to me unusual and worthy of some study. This led me to search the literature for the experience of others with the result of finding that, with the exception of Israel, authors make very little mention of hematuria as a symptom of hydronephrosis, and Newman distinctly states that the latter "is not attended by hematuria." In this research I have had the assistance of Dr. Edward Preble (whose thoroughness and linguistic attainment I can recommend) and of the result of our combined labors, it may be stated, that "although pretty nearly every other condition of the kidney and pelvis is spoken of as a cause, common or exceptional, of hematuria, none of the systematic reference books on renal disease, nor any of the reviews in the special journals and in the *Index Medicus* mention hydronephrosis in this connection." In the past few years we have found 13 cases have been reported. Of these *nine* are by Israel, one by Morris, who quotes one by Allingham, one by Reclus and one by Albarran.

It would also appear from our combined research that hydronephrosis *per se* is a comparatively infrequent disease in this country, for nowhere in American literature do I find recorded any series of cases and no individual experience like that of Israel, who reports forty cases, among them being the nine cases with hematuria as a symptom. It may therefore be inferred that either the better conditions under which our people live have prevented this form of renal disease or that American writers have not thought it worth while to publish their cases. The following case is presented as a contribution to this subject.

Case I.—Male, aged nineteen years, was brought to me with the following vague history: His father, who accompanied him, cannot remember that he had ever had any sickness until the present one, which began about a year previous. At that time he seemed to "run down;" complained of nausea and general malaise, and his mother noticed a sediment in his urine. Of this sediment no description is given. He was seen by a physician who said there was some slight "kidney trouble," and gave him some form of treatment. As he did not improve a distinguished Boston surgeon was consulted, who said there was blood in the urine, and that "the diagnosis was tuberculosis."

At present his symptoms are as follows: He

[1] Read at the New York Academy of Medicine, Surgical Section, December 2, 1904.

is emaciated, but not markedly. He complains of malaise and of an indefinite pain in both lumbar regions, described as of a dull character. He has some burning when he voids his urine, which is done at frequent intervals, and the quantity is greatly increased; for, he says he voids in the day about "five pints of urine," *i.e.*, about 2,500 c.c. His urine, as voided in my presence, is turbid, *alkaline*, and contains shreds, flakes, and phosphates, but no perceptible blood. That the blood appears intermittently and is variable in quantity is evident from a statement made subsequently that he had noticed "that jolting increased the amount of blood in his urine." He is chronically constipated, requiring daily use of cathartics, and this is his chief complaint. Physical examination of his sexual apparatus, including the prostate and seminal vesicles, is negative. There are no nodules and no lesions to be discovered, and no increased sensibility. Bimanual palpation of the left lumbar region shows a distinct fulness and resistance in that region, but no definite or distinct outlines can be made out.

The following day the urine was separated from the kidneys by means of the Harris separator and sent to a laboratory, with the following result:

Examination of urine of May 4; Harris separator. Right kidney: Small amount of blood; no pus, no casts, no tubercle bacilli found. Specific gravity, 1.008. Urea, 0.009 grms in 1 c.c. Functional capacity, 0.6. Left kidney: blood, small amount; pus, moderate amount; casts, small hyaline; no tubercle bacilli; specific gravity, 1.005; urea, 0.006; functional capacity, 0.25; weight, 61.5 kilo.

Remarks.—Right kidney: The total absence of renal elements with a functional capacity of 0.6, somewhat low but much better than the other kidney, probably justifies the conclusion that this kidney is normal. Left kidney: Lower gravity and lower relative amount of urea, larger amount of albumin, numerous hyaline casts, together with a moderate amount of pus and epithelium, presumably from the renal pelvis, would, I believe, indicate some pyelitis, with, probably, a more marked lesion of the parenchyma. The very low functional capacity (0.25), even as compared with the other kidney, would corroborate the suspicion of a more marked lesion of the renal parenchyma.

It is evident that the left kidney is the seat of his disease. He is given urotropin gr. v. four times in the twenty-four hours and water copiously. Six days later it is recorded that he has less backache and that his urine contains free blood in moderate quantity. On this occasion a soft catheter is passed into the bladder, which is irrigated till the fluid returns clear. Bimanual pressure is then made upon the left kidney and instantly spurts of pale *bloody urine* follow in characteristic and synchronous response to the pressure. The bladder is again irrigated until the fluid returns clear, and the same maneuver being practised over the right kidney the result is negative. Careful palpation of the left hypochondrium and loin shows that these regions are occupied by a mass whose outlines, consistency and limits cannot be defined, but apparently the left kidney is markedly enlarged and projects laterally, as well as anteriorly. The left lumbar region is flat on percussion, in strong contrast to the other side where the percussion note is distinctly tympanitic. The patient is given hygienic directions for the improvement of his general condition, to continue the water and urotropin and report in four weeks.

A month later he reported to me in better general condition, having increased in weight. He had been relieved from pain, but blood in the urine persisted. He has noticed that jolting, in a wagon, for example, increases the amount of blood in his urine. There is no change in the renal tumor excepting that it is not so prominent anteriorly. I was unable to make a positive diagnosis and advised an exploratory incision, which was done a week later.

The kidney was reached without difficulty by means of the Mayo Robson method, and after the perirenal fat had been separated, a bilobed, rounded tumor with thin walls presented. An aspirating needle drew slightly clouded urinous fluid. The tumor or sac walls was seized in two places and incised. About a quart of fluid escaped, some of which was preserved for examination. Exploration of the sac showed that the kidney was the seat of hydronephrosis and that comparatively little renal tissue was left, more being at the extreme upper pole than elsewhere. There was a moderately free hemorrhage from the interior of the sac, which was controlled by free irrigation with very hot water, and the latter also caused a marked contraction of the sac wall. A small flexible bougie was passed through the ureter to the bladder, as further proof that there was no obstruction between the kidney and the bladder.

The question of immediate nephrectomy was considered, but it was thought advisable to give him the benefit of drainage and perform a secondary nephrectomy, if necessary, under better general conditions. The patient made a good operative recovery and went to his home with a drainage-tube in the left kidney, with instructions to remain under the observation of his physician and to return after a few months in order that the question of nephrectomy might be considered. In the meantime his urine was to be examined repeatedly, that from the bladder separately from that received from the drainage-tube. The latter was dressed in such manner that the urine was received in a rubber receptacle worn beneath the clothing and without wetting the latter.

At this time a comparison of the urine voided from the bladder with the urinous fluid received in the rubber receptacle showed that the left kid-

ney still excreted a large amount of fluid of a low specific gravity and containing a small percentage of urea. Together they maintained the amount of excretion requisite for the patient's health.

The young man continued to improve steadily under the careful supervision of his family physician, who conferred with me by letter from time to time. The doctor, who is an instructor in the department of chemistry in the Tuft's College Medical School, made regular and systematic examinations of the urine. These showed a gradual improvement in the quality of the urine voided from the bladder, which was assumed to represent chiefly the urine of the right kidney. About eight months after the nephrotomy he wrote, "I have made a physical examination of the patient and find both his heart and lungs to be normal, while his general health is of the very best. I am inclined to the opinion that a gradual hypertrophy of the good kidney is taking place, and I believe that it is only a matter of time when it will properly perform the function of two kidneys. The presence of the diseased kidney in his body does not seem to be detrimental to his general health in the least, and I should, therefore, be conservative in any line of operative treatment until the compensatory hypertrophy is firmly established." With this view, so admirably stated by the physician, I fully agreed, and the young man was kept under observation for two months longer, when the urinary tests proving to be satisfactory and his general health remaining excellent, it was determined to remove the diseased and nearly useless kidney.

It is interesting to note here that the patient was kept for weeks continuously under the influence of urotropin. His physician wrote me that "under this treatment the condition of the bladder urine has greatly improved. Its acidity is normal for the first time in many months. The sinus urine, however, has shown little or no improvement, although by the bromine water test I have proven that the urotropin is being eliminated from both kidneys in the form of formaldehyde."

The operation was undertaken under ether anesthesia and the kidney sought for through the condensed tissues resulting from the previous operation. These had developed notably, especially along the line of the sinus, and made it difficult to separate the kidney from the surrounding tissues; consequently the manipulations necessary to accomplish this were prolonged, and during this time the sac bled freely from its interior. Supposing that a vessel had been ruptured in some way I opened the sac widely and unavailingly sought for a vessel. The hemorrhage continued free and uncontrollable till I folded the liberated parts of the sac on themselves, and, grasping the mass firmly in my left hand, compressed it as one would a sponge. The wound cavity then being cleared of blood and clots, the remaining adhesions were seen or felt, easily separated and the pedicle reached, cleared and clamped.

When removed from the body the kidney presented the usual appearance of hydronephrosis, being converted into a large, thin-walled sac, with some kidney tissue spread out upon its inner surface, but whether the process had begun in the pelvis or not it was impossible to say. The amount of hemorrhage from the thin and expanded kidney tissue was surpising, and the young man lost enough blood before it could be controlled to cause a very serious condition of collapse, from which he was rallied after the operation by copious hot saline enemata, hypodermics of strychnine, etc.

Prior to the operation he had been voiding from 450 to 500 c.c. of urine from the bladder. Within the first twenty-four hours after the operation there was a gradual increase in the volume of urine, until on the second day, he voided over 3,600 c.c., showing that the one kidney responded to the stimulus of the salines, and that it was competent to excrete a very large quantity of urine. After this his progress toward recovery was uneventful and he returned to his home in about two weeks in excellent condition.

The diseased kidney was sent to the Carnegie Laboratory for examination. Their findings are as follows: It was the seat of hydronephrosis. Microscopical examination reveals a subacute pyelitis, with destruction of the epithelial lining of the renal pelvis in some places where a granulation tissue had developed. The pyramids were atrophic as a result of the hydronephrosis. Within the kidney the arteries showed a considerable endarteritis, leading in a few places to a great diminution of the lumina of the vessels affected and to an atrophy of the renal cortex. There were also a few areas of round-cell infiltration in the cortex, but no suppuration or *tuberculosis* could be found. The epithelium lining the convoluted tubules had undergone some parenchymatous and fatty degeneration. No bacteria appeared to be associated with the lesions found, although there were some bacilli and a few cocci near the surface of the organ. They were probably accidental.

Among the chief causes of hydronephrosis given by authors are mentioned: An obstruction to the overflow from the kidney due to something developed in the kidney itself, as, for example, calculus or new growths. Secondly, such changes in the position of the kidney as disturb the relation of ureter to the kidney; and, thirdly, obstruction in the course of the ureter. Israel considers changes in the position of the kidney to be the most frequent cause of hydronephrosis, and that it can take place as the result of either abnormal mobility, or of a congenitally low situation of the kidney. At the time of the nephrotomy I satisfied myself that there was no calculus either in the kidney or its pelvis, and that there

was no obstruction in the course of the ureter; but, as to any misplacement of the kidney excepting that it was not in the bony pelvis, its magnitude had so changed its relations that I am unable to say. An enlargement of the operation wound might have made this point clearer, but the patient's condition did not warrant this. The report of the laboratory eliminates the question of neoplasm, but throws no light upon the etiology. Nor does any analysis of the clinical history make the causation clear. The patient had had unusually good health from his infancy up; there was no history of traumatism; there was no history of renal colic or of pain located in his left side; and prior to the onset of the nausea and general malaise there was no symptom indicating the begining of his malady. When the blood first appeared in the urine is also vague and indefinite, for its presence seems not to have been noticed till the fact was stated by the first consultant.

The obstinate constipation of which the patient complained and which appeared to be the cause of more misery to him than any other symptom, was no doubt due to pressure of the renal tumor upon the descending colon; for he did not suffer from this after the nephrotomy had reduced the size of the tumor; but its early stage, probably being regarded as a common functional affection, was not noted and it also affords no clue. Therefore how long the hydronephrosis had existed and the cause of the latter there is no means of knowing.

The character of the hematuria in this case is worthy of some study. The presence of blood in the urine was intermittent and variable in quantity; the latter being increased by slight trauma, such as has been mentioned, *i.e.*, jolting in a wagon, and by the manipulations of the kidney necessary to a diagnosis. It was also suddenly increased by unknown causes, but at no time was there a serious amount of blood in the urine. After the nephrotomy the blood which appeared from time to time was found only in the urinous fluid received through the drainage-tube, and only once was this fluid of a bloody color. I have analyzed the examinations made for nine months of the urine from the bladder and the sinus respectively and at no time did blood, even microscopically, appear in the bladder urine. Parenthetically it may be noted that this fact lends additional doubt as to the accuracy of the Harris separator, for it will be remembered, blood was found in the urine segregated by that instrument from both kidneys. The ureters were not catheterized at the outset because the diagnosis of tuberculosis had been made by a man of such reputation that I preferred to make the diagnosis by other means rather than to take a risk (even minute) of extending the infection.

The degree of hemorrhage during the extirpation of the expanded and attenuated kidney seems to me under the circumstances noteworthy. In my experience, even when deliberately and freely incising a fairly normal kidney for different operative purposes, and even when the manipulation of the incised kidney was prolonged, there never has been any loss of blood in such proportion as to jeopardize the patient. In this case there seemed to be very little kidney tissue left where the incision was made and the blood appeared to come from the interior of the sac and not from its cut edges.

In conclusion, let me add a fact in regard to this case which, though but remotely pertinent to the postoperative history, may have some interest. The patient regained excellent health and about a year after the nephrectomy made an application for life insurance. In due time the medical department of a life insurance company wrote me for an opinion as to the young man's "longevity." I could reply only that I had no opinion as to the longevity of a person with one kidney, but that I knew of patients who were well and comfortable and apparently living out their time with one kidney doing all the work.

20 East Forty-sixth Street.

TWO CASES OF TRACHEAL STENOSIS FROM NEW GROWTH.

BY GEORGE EMERSON BREWER, M.D.,

OF NEW YORK;

PROFESSOR OF CLINICAL SURGERY, COLLEGE OF PHYSICIANS AND SURGEONS (COLUMBIA UNIVERSITY); JUNIOR SURGEON TO THE ROOSEVELT HOSPITAL.

THE following two cases of tracheal stenosis, necessitating grave operative procedures for their relief, are reported for the reason that, in the writer's opinion, the conditions are sufficiently rare to make them of general interest to the profession.

Case I. Papilloma of the Trachea, following Tracheotomy, for the Relief of Papillomatous Degeneration of the Laryngeal Mucous Membrane.—F. B., aged eleven years, was admitted to the Roosevelt Hospital in July last. When five years of age he suffered from extensive papillomatous disease of the larynx, which interfered considerably with respiration. After unsuccessful local treatment an operation was advised by those in attendance. This was declined by the parents, and the condition grew steadily worse until the dyspnea became so severe that an emergency tracheotomy was performed. The tube was worn continuously for a number of months, during which time local treatment was applied to the laryngeal mucous membrane. Several attempts were made to remove the tube, but in each instance marked difficulty in breathing followed, necessitating its immediate replacement.

After consulting a number of surgeons and laryngologists, he finally came under the care of Dr. Frank E. Miller, of this city, who by persistent local treatment succeeded in removing the greater portion of the laryngeal growth. This, while it left a sufficient opening in the glottis for ordinary respiration, afforded no relief; for as soon as the tube was removed the dyspnea was

extreme. It was evident that an obstruction existed in the trachea immediately above the opening for the canula; and, from the length of time that the canula had been worn, it was deemed probable that the obstruction was of cicatricial nature.

The boy's condition was poor, he was anemic, had a chronic bronchitis and was exceedingly thin. Around the tracheal opening there was an extensive area of dermatitis.

Operation was advised, and on July 5, under chloroform anesthesia, an incision was made in the median line extending from the body of the hyoid to the sternum. The trachea was exposed with considerable difficulty below the original tracheotomy wound, incised, and a new tube inserted. The soft parts were then removed from the anterior surface of the larynx and upper segment of the trachea. After all hemorrhage had been arrested the patient was placed in the Trendelenburg position and the larynx and trachea freely opened by a median incision, extending from the thyrohyoid membrane to the original opening for the tube. A solution of cocaine and adrenalin chloride was immediately applied to the cut surfaces and to the laryngeal and tracheal mucous membrane. The tracheal wall was next retracted, exposing its entire mucous lining. Immediately above the old tracheal opening there was found a large papillomatous mass completely plugging its lumen and attached by a comparatively small pedicle to the left side of the trachea. The mass was about the size of a large blackberry. It was easily removed and its point of attachment touched with the actual cautery. Several papillomatous masses on and below the vocal chords were also removed. A large rubber tube was then placed within the trachea, extending from the lower tracheal opening upward through the larynx into the pharynx. This was secured by a thread passed from its upper extremity upward through the mouth and tied to the right ear. The trachea was closed over this by one or two catgut sutures, the cutaneous wound partly closed and dressing applied.

The operation was followed by moderate shock. The rubber tube was coughed out at the end of six hours. The tracheal canula was removed at the end of thirty-six hours. No embarrassment of respiration followed its removal, and his convalescence was uneventful. The patient has gained rapidly in flesh and strength, is able to go to school, and although the voice has not returned completely, it is constantly improving.

In this case the condition of the patient had become so deteriorated from chronic bronchitis, loss of sleep, bad nutrition and his inability to mingle with other boys and engage in their sports, that I regarded the prognosis as grave.

Recognizing that the operation would be a difficult as well as a protracted one, several precautionary measures were taken to avoid some of the dangers incident to such a procedure in a feeble and anemic subject.

Chloroform was used for anesthesia to diminish the chances of increased tracheal irritation and pneumonia, as well as to avoid postoperative vomiting. To enable the anesthetist to use a minimum amount of the drug, a large dose of morphine was given hypodermatically fifteen minutes before the chloroform was started. As a result of these measures, only a very small quantity of chloroform was used, and although the patient was completely under its influence for nearly an hour and three-quarters, there was no postoperative vomiting and no increase in the bronchial irritation or secretion.

A large incision was employed laying open the entire larynx and cervical portion of the trachea. This enabled us to see the entire extent of the disease and to recognize at once its point of attachment.

The use of cocaine and adrenalin on the mucous membrane, served in the first place to avoid the rapid fall of blood pressure and consequent symptoms of grave shock, which almost invariably follow contact with the mucous membrane on the interior of the larynx; it also produced a marked anemia of the tissues preventing extensive oozing of blood, and more clearly defined the pathological changes in the mucous membrane, thus enabling us more rapidly to eradicate the disease.

The Trendelenburg posture kept the pharyngeal mucus out of the wound and rendered aspiration of blood less probable. It also rendered the use of chloroform safer.

Following the operation, the tracheal tube, which was allowed to remain in the lower tracheal opening for thirty-six hours, was kept constantly covered with gauze wet in hot boric acid solution. This filtered and moistened the inspired air and may have diminished the chance of postoperative pneumonia.

Case II. Adeno-Carcinoma of an Accessory Thyroid Gland causing Marked Tracheal Stenosis.—J. R. H., a physician, aged fifty-two years, consulted the writer in March, 1904. Three years ago on exertion he first noticed a slight difficulty in breathing. He attributed this to lack of exercise and progressively increasing body-weight. Some months later it was noticed that there occurred occasional attacks of rather pronounced dyspnea, always following some unusual exertion. Believing that the trouble was asthmatic in character, his treatment consisted of the usual remedies for this condition. During the six months preceding his first visit to the writer the difficulty in breathing had greatly increased, the dyspnea becoming almost continuous. At certain times it was intense and accompanied by cyanosis. This so interfered with his work that he at last consulted Dr. Francis J. Quinlan, of this city, who, on examination with the laryngoscope, readily detected a very decided encroachment upon the caliber of the trachea by an oval mass apparently springing from the right half of the tracheal wall. This tumor was smooth, oval,

and covered, apparently, with healthy mucous membrane. It left a semilunar tracheal aperture about a quarter of an inch in diameter. The patient was also seen in consultation by Dr. Holbrook Curtis, who verified the diagnosis and referred him to the writer for treatment.

In addition to the above findings, the writer noticed a very slight bulging at the root of the neck, to the right and just above the sternoclavicular articulation. On deep palpation, a hard, oval mass was felt extending into the mediastinum. Moderate pressure on the mass caused an immediate increase in the dyspnea, and a greater degree of pressure produced absolute tracheal obstruction. From these findings, the diagnosis was made of an extratracheal tumor producing a marked indentation of the right wall of the trachea.

As a course of potassium iodide had already been tried without any improvement, an immediate operation was advised.

During the following four or five days, while the patient was arranging his affairs preparatory to entering the hospital, the dyspnea was markedly increased. He was unable to lie down, and on the night before entering the hospital his symptoms were so urgent that a brother physician passed the night in his house administering oxygen and stimulants freely. On the following afternoon he was again seen at the hospital by the writer, in consultation with Drs. Quinlan and Curtis. The symptoms were so urgent at that time that it was decided to operate immediately, as it was feared he would not survive until the following morning when an operation was planned.

In view of the alarming dyspnea and the difficulties of the operation, it was decided to entrust the anesthesia to Dr. Thomas L. Bennett, who promptly responded and administered chloroform. The patient at first took the anesthetic kindly, but as soon as the position of the head was changed to allow the performance of a preliminary tracheotomy, the dyspnea became extreme, an alarmingly and extreme degree of cyanosis developed.

An incision was made in the median line from the cricoid to the suprasternal notch, and thence continued downward toward the right in a curved direction for about three inches. The tissues overlying the trachea were rapidly divided and retracted, until the isthmus of the thyroid was exposed. This occupied practically the entire space between the cricoid and the sternum, and was exceedingly voluminous and highly vascular. Considerable delay was caused by the application of a number of mass ligatures, so that the thyroid tissues could be divided to expose the trachea. While this was in progress the patient ceased to breathe and the skin became livid. As the cut surface of the thyroid was bleeding profusely, it seemed unwise to make an attempt to open the trachea, which was pushed well to the left by a large encapsulated tumor which lay beneath the thyroid gland, partly within and partly above the mediastinum. About a minute and a half was consumed in controlling the hemorrhage, during which time respiration was completely arrested. As soon as the hemorrhage was controlled the trachea was opened and an attempt made to introduce a tube. Owing to the narrowness of the lumen, only the smallest-sized infant tube could be introduced. Respiration was at once re-established, and the patient's color improved. The thyroid and other tissues were gradually dissected away from the tumor, which was found to be completely encapsulated, and to lie closely adherent to the trachea, the esophagus, the recurrent laryngeal nerve, the jugular and the innominate veins, and the innominate artery.

About one hour was consumed in dissecting the tumor free from these structures. The wound was then partly closed, a large gauze drain being left in its middle third, with the view to keeping the wound open and exposing the tracheal wall for subsequent X-ray treatment in case a histological examination revealed any signs of malignancy.

The patient's recovery was prompt, and, aside from a short period of idodoform poisoning, it was uneventful. Laryngoscopic examination showed a paralysis of the right vocal cord, but a great increase in the lumen of the trachea. The vocal paralysis was undoubtedly due to division of the recurrent laryngeal nerve. On examination, the tumor proved to be an adenoma, probably of an accessory thyroid, and it showed in places slight changes suggesting carcinomatous degeneration.

In this case the tracheotomy was by far the most difficult and hazardous part of the operation. As the patient was stout and had a short thick neck, as soon as the position of the head was changed to allow an exposure of the trachea, the tumor seemed to be forced against the tracheal wall and to produce complete obstruction. As the entire lower segment of the cervical portion of the trachea was covered by an exceedingly thick and vascular thyroid isthmus, this had to be divided between numerous ligatures before the trachea could be exposed low enough to allow the tube to pass the point of greatest obstruction.

As all of this had to be done after the patient had ceased to breathe, and as the cyanosis was extreme, it was difficult to resist the temptation to plunge at once into the trachea before the bleeding had been completely arrested. I am convinced, however, that had this been done before we had an absolutely dry wound, death would have immediately resulted, for had blood in any amount been drawn into the trachea it could not have been expelled by coughing through the small tube we were obliged to employ.

THE MANAGEMENT OF ACUTE GENERAL PERITONITIS.[1]

BY J. GARLAND SHERRILL, A.M., M.D.,
OF LOUISVILLE, KY.

Two forms of this affection are to be recognized clinically; the first, acute septic peritonitis, in which the poison is so intense that the patient dies from a profound toxemia before the local changes have progressed to the point of pus formation. Such cases follow perforating wounds of the intestines, perforation from typhoid ulcer, and ulcer of the stomach, gangrene and ulceration of the appendix, rupture of the urinary or the gall bladder, acute cholecystitis, ileus, puerperal infection, and less frequently disease of the ovary and tubes. The latter conditions are more often followed by a localized type of inflammation, as a result, perhaps, of a less virulent form of infection and because of the partial isolation of the pelvic structures from the other abdominal viscera.

The second type is general suppurative peritonitis in which pus is found free in the peritoneal cavity without any localization of the process, and the term should not be strictly limited to inflammation of the entire serous surface. This form may follow any of the causes mentioned above, but is especially prone to result from rupture of an appendicular or other abscess into the cavity. It would seem that these cases go on to suppuration because of a partial immunity which has developed during the time the causative abscess has been forming, which increases the local repsonse to the irritant and causes the disease to be prolonged sufficiently for pus formation to occur. Notwithstanding the possibility of such resistance to the infection these cases must always be considered as very grave. While they may not be so rapidly fatal, as the septic type, they are exceedingly likely to terminate in the same way.

To account for the difference in these two forms as regards toxemia, we must take into consideration the absorptive power of the peritoneal surface. This large lymph sac has great absorbing capacity, and when the more intense infections obtain entrance, the chemical products are very rapidly carried into the circulation, but when a local reaction is excited by the presence of a less virulent infection, the lymph channels become choked with leucocytes and just in proportion to this obstruction is absorption diminished. Finally, as suppuration occurs numbers of leucocytes, lymph, and serum appear on the membrane accompanied by an exfoliation of the epithelium, and it is possible that here again an absorbent surface is present. It would seem probable then that the suppurative cases are the more favorable ones for treatment. It has been claimed by very many competent observers, that septic peritonitis cases all die, and that post-operative cases are likewise always fatal, yet there are on record a number of cases of recovery from operation done for the relief of these conditions, notably; Hintze reports two successful operations for postoperative peritonitis.

We are forced to admit that many cases, especially of the septic type, will die, no matter how soon they are seen, nor what plan of treatment is adopted. On the other hand, we may safely claim that there is a large proportion of cases which can be relieved by surgical interference, and some which can be conducted to a favorable issue by medical means alone. That the latter is successful in any large number of cases, we cannot admit, but when we consider that every case begins at a local point of infection, it is certainly true that medical measures are effective in some cases in keeping the process limited to a local inflammation. In offering this paper, I make no claim to present anything new, but do so with a desire to elicit from a discussion of this most interesting subject some ground upon which those who hold very widely different views can meet and formulate some reasonable plan of treatment which, with slight modification to suit individual cases, can be generally adopted by the profession. With the best authorities at variance upon a subject of this importance, the average practitioner is left quite at sea. The first question for consideration is, whether medical treatment or surgery offers most to these unfortunate individuals. Prior to 1843, when Volz advised the use of opium in these cases, the results were uniformly bad. This plan of treatment, first urged upon the profession of this country by Alonzo Clark, showed a considerably lower rate of mortality than the former methods in use, and was almost exclusively followed, until Tait urged the administration of salines to drain the inflamed peritoneum, and brought about another radical change in the treatment. The opium treatment is based upon the idea that by preventing peristalsis, adhesions form between the intestines, leakage is diminished, and tissue resistance can overcome the infection. The second plan is founded upon a radically different idea, namely, that in inflammation of the general peritoneum, salines remove offending material from the intestine and cause rapid removal of fluids from the blood, and an equally rapid elimination from the peritoneal cavity of the poison produced by the mycotic growth. More recently there has been a tendency to the rest treatment of inflammatory conditions within the abdomen, largely as the result of the stand taken by Ochsner upon the treatment of appendicitis. He claims to get a quiet intestine, and the relief of pain by emptying the stomach, allowing nothing to be taken into its lumen, and avoiding the bad effects of opium, such as meteorism, constipation, and diminished kidney secretion. Others are using opium for the pain and salines to move the bowels, and are giving some food by the mouth. We find, therefore, three distinct plans of treatment, each of

[1] Read before the Southern Surgical and Gynecological Society.

which has been perhaps of benefit in some cases. As to which of these is best in cases where surgery is not indicated, or will not be permitted, it is difficult to determine. Ochsner's statistics seem to show the lowest mortality when the disease follows appendicitis.

I must confess that my cases have usually been considered surgical; therefore, I cannot deny his claims. I can see the advantage to be gained by relieving the stomach of the highly toxic fluids which are carried into it by reverse peristalsis, but I can more readily perceive the benefit to be obtained from a brisk purge in non-perforative cases and as well after a perforation has been closed by operation. It is generally admitted that this is a bacterial disease, frequently due to perforation of the alimentary canal, or to rupture of an abscess, various forms of organisms being found in different cases. The claim is justifiable that in the inception this is always a local infection, and in the large majority of cases its prompt recognition places it within the domain of surgery. Medical treatment is then indicated only in those cases where surgical aid is refused by the patient and in those in which the grave condition of the patient renders it likely that an operation will remove the slight chance remaining for recovery. In cases seen early, where operation is refused, it is exceedingly important before medical treatment is commenced, to determine if possible the causative lesion. In many cases this cannot be done, but careful attention to the history and symptomatology will in a majority of the cases enable the attendant to reach a conclusion upon which he may plan a logical course of treatment. In order to make clear this point, it will be necessary to distinguish not only between perforative and non-perforative cases, but also between perforations of the stomach and those of the intestine. We will therefore consider the form due to perforating ulcer of the stomach from a medical view point. The first importance should be given to absolute rest of the stomach, no lavage, no food, no medicine, no water nor anything else being allowed. An enema to unload the lower bowel and relieve meteorism should be used. Colon lavage can be safely employed, if necessary, followed by nutriment enemata as indicated. If there is reason to believe that the rupture is posterior, the hips and the shoulders as well can be raised, with a view to retain the process in the smaller sac of the peritoneum, as recommended by Lennander. The employment of heat or cold locally can be tried here as in all other varieties.

When the rupture is lower in the alimentary canal, and in cases of obstruction where there is danger or possibility of a rupture, gastric lavage can be safely employed, but purgation, and even large enemata are very dangerous. One case coming under my care with rupture from a blow was lost, probably because of injudicious efforts to cleanse the lower bowel, none of the fluid returning. Absolutely nothing should enter the stomach after it has been thoroughly cleansed. Small enemata of concentrated solution of sulphate of magnesia with glycerin can be used to empty the rectum, and small nutriment enemata administered at proper intervals. If opium has any place in the treatment of peritonitis it is in a case of this kind, and it can be given quite fearlessly. The patient should be placed in a position of simply recumbency.

In cases following puerperal infection, surgical operation, the rupture of an abscess, and rupture of the appendix, a very different plan of treatment should be employed. Rupture of the appendix has been included under this division because the appendix which ruptures is in the vast majority of cases one whose lumen has become to a great extent isolated from the bowel, owing to the great swelling of the lymphoid tissue, or on account of torsion, or in some instances from cicatricial contraction. In favor of this view is the fact that one of the prominent factors in the production of inflammation of the appendix is an admitted inability of the organ to empty itself. Therefore, the danger following a ruptured appendix is not from fecal extravasation, but from the contained bacterial flora. There being little danger then of further increase in the dosage of the poison, I believe we are justified in the use of purgatives in this condition and in ruptured abscess and postoperative cases as well. It appears to me to be good practice to obtain a clean alimentary tract in cases of this character, because a prolific course of infection can be removed by elimination of the feces, also by causing a rapid osmosis from the peritoneal cavity without increased danger. My attention has been drawn to the acridity of the feces by some cases of large appendicular abscess of more than one week's standing in which a communication existed with the lumen of the cecum. After the abscess had been opened and its cavity cleansed, I have noted that the discharging feces was so poisonous that it produced marked sloughing of the wound margin. This sloughing only subsided when the alimentary canal had been thoroughly flushed by a brisk purge. The contention then seems reasonable that in cases where there is no leaking intestine, the treatment by gastric and rectal lavage and brisk saline catharsis is indicated. I do not mean to say that in all cases we can certainly exclude a leaking bowel, but when we can do so this should be our plan. I would especially urge that in the management of these cases, routine treatment should be eliminated as nearly as possible. It is extremely doubtful whether in any one of these forms of peritonitis topical applications, other than heat or cold, ever do any good. Leeching has some advocates and is perhaps worthy of a trial. In cases due to streptococcic infection, as shown by the presence of the organism in the blood, anti-streptococcic serum should be tried. Careful stimulation should be given for all.

In considering the surgical treatment of this subject, much stress should be placed upon operation as a measure for the prevention of general peritonitis. In the largest number of cases, prompt interference for the relief of any of the causative conditions before the serosa is soiled, or while the peritonitis is still confined to a limited portion of the membrane, offers the best chance of recovery.

Then, in all cases save where the two conditions already mentioned prevent operation, a section is indicated. The outcome of a given case will depend upon the following factors without reference to the special steps in the operation or the subsequent care, viz., (1) the virulence of the infection; (2) the quantity of the infecting medium, as extravasation from the bowel, or the amount of pus from a ruptured abscess; (3) the resistance of the patient, a factor never to be overlooked and rarely to be correctly estimated; (4) the activity of the organs of elimination, which in many instances can be fairly accurately determined and thus become an aid in prognosis; (5) the time at which the patient comes to operation after the poison enters the cavity; (6) the dexterity and thoroughness of the surgical procedure, no matter what is the special method of the operator in attempting to reach the desired end. Of all the factors mentioned only four come directly under the control of the surgeon. The amount of the poison may to some extent be lessened by early recognition and prompt interference. The time following infection then is of the greatest importance, and we can all agree that the sooner after the shock of a perforation is combatted, the operation is performed, the better the patient's chances, other things being equal. The power of elimination can be markedly stimulated and therefore is to some extent under the control of the surgeon. The sixth factor is also of great importance, and whatever the technic selected I should urge rapid but thorough work with the minimum amount of traumatism.

In the technic again we find a wide difference of opinion. How is it possible to reconcile the claims of the school, Finney and others, who do not believe in irrigating the abdominal cavity, but rely upon sponging to take up the infectious material, with those of another school who simply open and drain, doing nothing further, or with those of the third school, Deaver, Price, Blake and others, who advise the free use of hot saline solutions? These views are apparently so different that to reconcile them would seem impossible, yet the object of each is to free the patient of the noxious material and allow him to combat the poison already absorbed. By keeping this in mind, we can readily see that one operator reached success by carefully sponging loop after loop of intestines and also the spaces where fluids are so prone to collect, while the other uses water to remove the pus and bacteria, believing that in this way he can best accomplish the end desired. Those who open the abdomen and drain without sponging or irrigation, are evidently of the opinion that any further surgery in cases where this plan is used would be immediately fatal and therefore hope to accomplish something from the incomplete surgery, thus making the best of a bad state of affairs.

It is scarcely my purpose to defend one plan of surgery and to decry another in these cases, believing that there are others who are specially equipped with facts to defend the positions which they have taken upon this subject. Yet I cannot refrain from commenting upon those who advocate sponging, and argue that irrigation tends to scatter the fluid containing the organisms and their toxins widely through the cavity, thus favoring further absorption; to some extent this criticism is just, especially when the irrigation is incompletely done. I believe also that the toxins are likely to be absorbed more rapidly when diluted with water; so that this danger should always be borne in mind to urge us to be most thorough in this flushing. On the other hand, those who irrigate claim that to obtain a perfect peritoneal toilet by sponging, it is necessary to subject the peritoneum to a great amount of trauma, thus adding greatly to the shock, and favoring the rapid passage into the blood not only of toxins, but of micro-organisms themselves.

These are matters of judgment to be decided by the individual operator. Personally, I feel that I can cleanse an abdomen, which is the seat of this form of inflammation, better by flushing than in any other way, and have found that my more recent results are better than former ones, simply because I do my work in a more thorough and systematic manner.

I am no longer content to flush only the pelvis, a very satisfactory procedure after the enucleation of a tubal or ovarian abscess, but irrigate in each loin and under the liver as well. Often surprise has been expressed at the amount of pus brought out after a large quantity of clear fluid had returned from pelvic irrigation. It appears to me that we must give more attention in these cases to the condition of the lesser peritoneal cavity, which in some cases will require flushing and drainage. After the irrigation, a large gauze sponge should be used to take up the fluid remaining in the abdomen, and this step may be repeated just before the wound is closed. Some operators fill the abdomen with saline solution, but I think this of little benefit when a drain is used. We cannot claim that either sponging or irrigation renders the cavity absolutely sterile, as experiments upon animals have shown this to be impossible. Yet the amount and virulence of the infection may be so diminished that many of these patients recover. Drainage is almost universally used, although Blake concludes it is often unnecessary. It can do very little harm and may save life in some instances. A number of gauze

drains surrounded by rubber may be inserted in the pelvis and other portions of the abdomen where fluid tends to collect, and a posterior drain may also be used. Glass or ordinary fenestrated rubber tubes are preferred by some to the use of gauze. I have had recovery in some cases in which a single gauze drain allowed the removal of only a small quantity of serum, and am therefore convinced that the result depends more upon the thorough manner in which the toilet is made and the lesions repaired, than upon any special form or number of drains. Some operators inject solution of sulphated magnesia into the intestine during the operation and claim very beneficial results. The Fowler position will be found useful in many of these cases. The patient should have the usual treatment given all abdominal cases, should be carefully stimulated and should have no opiates unless demanded by great restlessness.

My individual experience has been that these patients fare as well with morphine as when it is not given. This impression may obtain because the more serious cases are the ones which demand morphine. If the patient ceases to vomit and the abdomen becomes flat, I do not hasten to administer a purge, and when vomiting and distention persist, purgation rarely relieves, although it deserves a trial. The convalescence may be interrupted by the formation of localized collections of pus which must be evacuated and the cases conducted in accordance with general surgical principles. Cases in which the pus shows streptococci should receive the serum. Very little mention has been made of the septic form of peritonitis (acute peritoneal sepsis of Mayo Robson) because it can only be suspected from the extreme toxemia and is usually positively recognized only after the death of the patient.

At its very onset, the pathology is identical with the suppurative form, and the only hope for the patient lies in the removal of the cause and the prevention of new infection by operation. The extreme gravity of such cases might tempt the surgeon to refuse operation, yet for the individual patient surgery is the only hope, and unless he is moribund should receive this chance.

In conclusion, these cases should be considered surgical with the two exceptions above mentioned. Operation should be done as a preventive measure before peritoneal infection and as soon after its occurrence as is possible, in some instances of prolonged shock before reaction is complete. The operation should be done as rapidly as is consistent with thoroughness, and above all things, we would urge that incomplete surgery be not done. Each surgeon must determine for himself how he can best free the peritoneum from infection, and he must realize that in the great majority of these cases the fate of the patient is determined when he leaves the table.

THE CLINICAL MANIFESTATIONS OF UTERINE FIBROIDS, AS INDICATIONS FOR EARLY OPERATIVE INTERVENTION.[1]

BY ARNOLD STURMDORF, M.D.,
OF NEW YORK.

IT is neither my object, nor within my time limit, to encumber this introductory discourse with anything approaching a complete and detailed enumeration of the various manifestations —immediate and remote—local and general—that constitute clinical indications for radical intervention in uterine fibroids: but rather to touch in a general way upon certain phases in this relation to the subject, on which our knowledge has been amplified and our conceptions cleared.

Modern research brings many demonstrated facts into striking contrast with older fancies, and in the study of uterine fibroids, has shed much light that has not as yet found diffusion in the general medical atmosphere. But long strides in our knowledge and mastery of this disease span a comparatively short time-interval, and the accumulated literature, though voluminous, is as yet so scattered that it is difficult, unless specially interested, to obtain a comprehensive view of the present status of this subject.

Barely two decades have elapsed, since a prohibitive mortality prompted Skene and others in this country, Keith, Schröder and Winckel abroad, to express themselves as follows:

"Uterine fibroids present a self-limited disease which rather torments than kills, in which every palliative means demands trial; and only when hemorrhage becomes uncontrollable, the progress rapid, with cystic or suppurative changes, health ruined or life endangered, can operation be justified."

Of every hundred women operated upon at that time eighty-five died, and Emmet, Sr., wrote: "Seeing the results of operation, no surgeon is justified in attempting to remove the uterus for the growth of a fibrous tumor, *except as a forlorn hope.*"

To-day, the results of operative treatment for this condition constitute one of the most brilliant achievements of American surgery, and no woman, afflicted with uterine fibroids and subjected to modern operative technic, should lose her life—*if operated at the proper time.*

Unfortunately, however, the authoritative condemnation of operative intervention and the deplorable doctrines promulgated twenty years ago, continue to dominate a certain proportion of the medical mind, and this, notwithstanding that we have since learned, that these growths, while histologically benign, possess a clinical malignancy peculiarly their own; that they are *not* self-limited; that a climacteric millennium is a delusion and often indeed a snare; that they *can* kill as well torment, by inducing local and constitutional conditions hitherto unrecognized; and lastly that to the present time, all palliative ther-

[1] Being the introductory discourse in a Symposium on Uterine Fibroids held before the Medical Society of the County of New York at the New York Academy of Medicine, November 28, 1904.

apeutic efforts have not only proven futile, but in many instances disastrous.

Formerly we did not know *how* to operate upon these cases with safety, and we were inclined toward palliation by the histologists' assurance of their benign character. To-day we recognize that histologically benign structures may embody malignant clinical potentialities: The *how* to operate is a solved problem. It remains but to establish the *why* to operate,—the *when* to operate will then resolve itself into a natural corollary.

Every attempt to establish the indications for radical operative intervention in a given condition, must be based upon the consideration of three essential elements: (1) the usual tendencies of the disease in question, uninfluenced by treatment; that is, the probability of spontaneous cure; of chronicity or ultimate fatality; (2) the potency of our therapeutic resources: (3) the immediate and remote results of radical operative intervention.

Recent studies demonstrate that uterine fibroids can exhibit, aside from their established proneness to direct sarcomatous degeneration, a clinical malignancy, differing only in quality from that characterizing the classic types of cancerous affections.

Dr. Charles P. Noble, of Philadelphia, recently presented a table of the degenerations and complications in a series of 1,188 cases of fibroid tumors, operated upon by Martin, Cullingworth, Frederick, Scharlieb and himself, including also a series reported by Hunner and MacDonald.

Especial attention was called to the relative frequency of adenocarcinoma of the uterus as compared with epithelioma of the cervix. The deduction drawn from this fact was, that fibroid tumors were a direct predisposing cause of cancer.

A careful consideration of the facts presented in the table, adds the author, should convince anyone with an open mind that the classical teachings concerning fibroid tumors were erroneous. These teachings were, that fibroid tumors of the uterus were benign growths, which usually produced but few symptoms and which after the menopause underwent retrogressive changes, becoming smaller or disappearing; that their chief danger consisted in the fact that, at times, they caused hemorrhage from the uterus and that rarely they caused trouble because of their size or pressure on adjacent viscera.

An analysis of the 1,188 cases showed that, as a result of the degeneration of the tumors, about 16 per cent. of the women would have died without operation; about 18 per cent. would have died from the complications present. In addition, he recalled that a percentage would have died from intercurrent diseases brought about by the chronic anæmia present in many of these cases and by injurious pressure from the tumors on the alimentary canal and urinary organs. In brief, at least one-third of the women having fibroid tumors, as shown by this author's tables, would have lost their lives, had they not submitted to operation.

The actual list of death recorded from unoperated uterine fibroids, contrary to the general impression, is very long and instructive.

E. Stanmore Bishop, in a recent volume on this subject, published such a series of fatalities, carefully detailed from authentic accessible sources, presenting cases, in which death supervened as a direct result of the unoperated growth.

Gervis[1] published a case showing a large submucous fibroid, which had sloughed suddenly and completely, without obvious cause or premonitory symptoms.

There was double pyosalpinx and one tube had ruptured causing fatal peritonitis.

Lediard[2] reports patient with large abdominal tumor, causing dorsalgia, metrorrhagia and gastric disturbances accompanied by rise of temperature. Death after nine days of observation. Autopsy revealed miliary abscesses of recent development of both kidneys and infarcts of spleen.

Tait[3] reports patient aged thirty-four years, who died without operation. Post mortem revealed uterus as a black sloughing mass.

Lediard[4] reports fibrocystic myoma reaching 2½ inches above uterus. After examination by sound, peritonitis; death on ninth day; autopsy: Both ovaries partly cystic, miliary abscesses in kidneys, spleen soft, enlarged, several recent infarcts, liver fatty, lungs edematous.

Edis[5] reports patient aged thirty-nine years. Amenorrhea for two months nine months ago, followed by flooding without warning. Soft and resilient tumor felt in posterior cul-de-sac; rigor, acute general peritonitis; death. Post mortem reveals general purulent peritonitis; both Fallopian tubes thickened and distended. Both ovaries contained small abscesses. The tumor in Douglas's pouch was a soft fibroid containing several small cysts.

Cotter[6] showed a subperitoneal fibroid removed after death. Patient aged forty-five years: diffuse suppurative peritonitis, much fetid pus, adherent intestines. Tumor attached to posterior surface of uterus by a short thick pedicle.

Favell[7] reports a case where the patient died from sudden profuse hemorrhage.

Bigonin[8] showed a uterine fibroid, involving the entire uterus. Patient aged thirty-eight years. Had noticed tumor for ten years. Two days before coming under observation she struck her hypogastrium against the edge of a table. On admission, violent pains and vomiting, abdominal distention; temperature 100° F.; death. Post mortem: Abdomen full of blood, from a large rent in the back of the tumor mass.

Lee Dickinson[9] reports patient aged forty-eight years, single. Growth noticed twelve

1 Trans. Obst. Soc., Lond. July 4, 1883.
2 British Medical Journal, 1883, Vol. 2, p. 941.
3 British Medical Journal, 1883, Vol. 2, p. 1076.
4 British Medical Journal, 1884, Vol. 2, p. 372.
5 British Medical Journal, 1888, Vol. 2, p. 940.
6 British Medical Journal, Vol. 1, p. 194.
7 British Medical Journal, Vol. 2, p. 1139.
8 Nouv. Arch. d'Obstet. et de Gynecol., April, 1892.
9 Lancet, London, Vol. 1, p. 22.

months, grew rapidly during last twenty-seven days. Death from exhaustion due to hemorrhage and pressure symptoms. Post mortem: Tumor in anterior wall of uterus. Externally, both macro- and microscopical characteristics of a fibroid. Centrally soft and yellow.

This central portion had broken down into the cervical canal and through the posterior wall of uterus into the peritoneal cavity, forming a spouting hemorrhagic growth which filled the pelvis and extended upward into the left iliac fossa, surrounding and compressing the sigmoid flexure.

Sheard[1] reports a calcified subperitoneal tumor found after death from apoplexy.

Gouget[2] reports a broad ligament fibroid causing death by uraemia, hydronephrosis and atrophic interstitial nephritis.

Schletelig[3] reports death without operation from general chronic peritonitis. Pus under intestinal adhesions. Fibroma of broad ligament.

Cullingworth[4] reports widow, aged fifty-five years, with chronic constipation and attacks of severe abdominal pain. Menopause at fifty-three. Admitted to St. Thomas' Hospital October 8 for intestinal obstruction. Moribund on admission and died same evening. Post mortem: Rectum flattened and obstructed by uterine myoma; tumor adherent to pelvic wall and slightly to rectum. Entire colon distended; the cecal wall had given way and feces escaped into the abdomen. (St. Thomas' Hospital reports, 1895, p. 412): Woman admitted with large sloughing fibroid; septicemia; death.

Tarnier reports five pregnant women suffering from fibroids who died before delivery.

Kelly[5] reports case of woman, aged forty-five years, myoma of uterus with central necrosis; dilated ureters, pyelonephritis, emphysema of lungs, general marasmus; cardiac hypertrophy with hyaline fatty and calcareous degeneration. Death without operation.

Baldy mentions two deaths while undergoing treatment by ergot.

Thornley Stokes[6] mentions a case of a woman, aged thirty-four years, who died in syncope while waiting to be operated upon.

Henry Morris, quoted by Bishop, reports a case of uterine fibroid causing intermittent retention of urine. Double pyosalpinx and left ovarian abscess. Dilatation of ureters; acute double nephritis, purulent peritonitis; death.

Lombe Atthill[7] showed at a meeting of the Pathological Society, at Dublin, two large fibroids removed post mortem from a woman who died suddenly. Pus was found in the substance of the uterus and she lost her life from a resulting septic embolic pneumonia.

Hogan reports a case of pregnancy in a fibroid uterus. Rupture at the fourth month; death.

1 British Medical Journal, 1890, Vol. 1, p. 462.
2 Bull. Soc., Anal. d. Paris, 1892, p. 222.
3 Arch. für Gynec. u. Geb., Bd. 1, p. 425.
4 Trans. Obstet. Soc., Lond., 1897, Vol. 39.
5 Operative Gynecology, Vol. 2, p. 539.
6 British Medical Journal, 1881, Vol. 1, p. 195.
7 British Medical Journal, 1881, Vol. 2, p. 1058.

Finlay[1] reports patient, single, aged fifty-nine years. Had noticed an intra-abdominal tumor for fifteen years. It had caused no special trouble until quite recently, when it rapidly enlarged. She died of acute peritonitis shortly after coming under observation. At the necropsy, a smooth, encapsulated, globular tumor, the size of a fetal head at term, was found attached to the fundus uteri by a short narrow pedicle. Its summit was in a state of incipient disintegration. In this vicinity several coils of small intestines were adherent, one of which was perforated by a spur of the neoplasm. The adjacent part of the bladder was similarly affected. The rest of the tumor presented the appearance of a soft fibromyoma. An ordinary subperitoneal "fibroid," the size of a walnut, was attached to the right side of the uterus posteriorly. The cervical mucosa presented several small mucous polypi. Secondary nodules were found in the base of the right lung, in the wall of the left ventricle of the heart, in the left kidney and in the infraclavicular lymph glands on the left side. On histological examination the uterine tumor proved a myosarcoma, in which groups of round and spindle-shaped cells were interspersed with fibrous tracts containing unstriped muscle cells. The secondary growths were of similar structure, only the round-celled elements were more abundant.

Royal College of Surgeons' Museum—No. 4639. Woman aged thirty-six years. Twelve months before death noticed a hard lump in the right hypochondriac and lumbar regions. Owing to the length and flexibility of the pedicle, the tumor appeared during his life-time to be quite free from the uterus. The catamenia were normal till four months before death, which took place twelve hours after giving birth to a four months' fetus. The abortion was preceded by peritonitis and high temperature for several days. The tumor, a large one, was subperitoneal, springing from the back and left side of the fundus. Tumor measured ten by five inches, the pedicle was four inches long, 1½ inches broad, one-third inch thick.

No. 4642. Two calcified uterine fibromyomata. One large kidney-shaped mass, seven inches long by 3½ inches wide, composed of hard yellow earth substance deposited irregularly through a tough fibrous tissue; the external surface is minutely nodular and rough. It is invested with a thin capsule of fibro-cellular tissue, to which the adjacent abdominal organs are adherent. Several coils of intestines are attached, not by their free surfaces, but by their mesentery, and it would appear that any attempt to remove the tumor would have very injuriously interfered with the blood supply of these coils. The uterus was said to be ossified, probably because it has smaller tumors of the same kind in its walls. One such growth, closely attached to its wall, was connected by a strong band to the

1 British Medical Journal, 1883, Vol. 1, 459.

first tumor; a coil of intestine was acutely strangulated by this band, and was the immediate cause of death.

St. George's Hospital Museum.—No. 14H. Woman, aged forty-seven years, admitted in a dying state, and expired a few days afterward. She had suffered from symptoms of polypus uteri for eight years. No means had been taken to remove the tumor. Other fibrous tumors were embedded in the uterine walls. The vagina was considerably dilated, its lining membrane inflamed, and covered with mucopurulent secretion. The lower and anterior surface of the tumor was much ulcerated. The tumor itself lay in the vagina, and was attached above to the internal wall of the uterus by a long pedicle. Both ovaries were healthy. (Post mortem and Case Book, 1848, p. 5).

No. 14r. Case of death without operation from peritonitis resulting from an abscess between vagina and bladder. Woman, aged forty years. Two tumors, one the size of a tangerine in anterior wall, one the size of a cocoanut in posterior wall. The weight of the posterior tumor had caused introversion of uterus and the mass had pressed upon and caused serious obstruction of ureters. (Post mortem and Case Book, 1870, No. 342). Body fairly nourished and in good condition. Both pleuræ covered toward the bases with recent lymph and in the cavities was a considerable amount of fluid. No false passage leading from the urethra could be discovered. Pelves of kidneys and ureters were extremely dilated, surfaces granular and cysts existed in the cortices. Capsule very adherent.

14w. Uterus greatly distended by fibromyomata, enlarged to size of seven months' pregnancy. Jane S., aged thirty-five years, died in the hospital July 23, 1882. For six years menstruation had been profuse and painful and for three years the abdomen had been increasing in size. Three weeks before death, the patient was seized with severe burning pain in the sacral region, hips, and hypogastrium, and the discharge, which had simply been mucus, became brown and offensive (for six months a thick, yellow discharge). A soft mass was now discharged from the vagina. On examination a firm fleshy mass was seen protruding from between the labia; this filled up the vagina and could be traced into the os, where many more were felt. These were apparently loose, and were removed by the hand. They were blackish and horribly offensive. The patient suffered much from vomiting. Large masses of foul, sloughing organized matter were occasionally discharged from the vagina, and the patient sank. Post mortem: The abdominal cavity was found occupied by a large tumor reaching from liver to pubes, which proved to be the uterus altered as described. There were some flakes of recent lymph in the peritoneal cavity. All the other organs were natural. (Post mortem and Case Book, 1862, p. 200). Body corpulent, belly swollen, feet and ankles edematous. Heart flabby, valves natural. Lungs healthy. Ovaries and tubes healthy. Spleen rather large; contained a small fibrinous block. Intestines and folds of peritoneum were glued together by flakes of recent lymph. Death.

St. Bartholomew's Hospital Museum.—No. 1887. Cavity of uterus greatly enlarged and filled with retained blood. Anterior portion of tumor solid; forms about two-thirds of the whole mass. Left Fallopian tubes much thickened and dilated in its outer part. This was 12 inches long and contains blood. Anterior portion consisted of large tumor, measuring seven inches anteroposteriorly; was everywhere encapsulated by the wall of the uterus, except posteriorly where the cavity of the tumor opened into the cavity of the uterus by an oval aperture, five inches vertical by 3½ inches transverse diameter. The wall of the uterus at this point was 2½ inches thick below and 1¼ inches above. Immediately beneath the capsule is a layer of calcareous deposit. The whole of the central portion of the tumor is broken down, forming a large irregular cavity, filled with putty-like blood. Cause of hemorrhage was not discovered. Death without operation.

2960b. Woman, aged thirty-four years, admitted for difficulty in micturition and defecation of two years' duration. A rounded mass felt in the abdomen reaching to the level of umbilicus and continuous with a hard, thick, nodular tumor, which was discovered per vaginam to occupy the whole pelvic cavity and extend on to the perineum. Exploratory laparotomy. Patient died of peritonitis. Post mortem: Tumor found in condition of suppuration.

Guy's Hospital Museum.—2271.90. A large fibrous polypus distending the uterus. The tumor led to considerable hemorrhage. It projected through the os uteri, and the extremity of it was ligatured. The hemorrhage ceased but the patient eventually sank.

2275.80. Woman, aged forty-four years, in 1887, married, several children. Five years before was seized with severe hemorrhage. This continued at intervals; when in 1887 the attacks were more frequent. A profuse hemorrhage at last proved fatal. There was no other disease in the body (Guy's Hospital, Vol. 3, p. 143).

These are cases in which death supervened as a direct result of the unoperated growth. But *indirectly*, uterine fibroids are responsible for many more. Winckel's statistics show that in about 10 per cent. of *all* cases death ensues after a variable period.

These direct and indirect causes of death from unoperated uterine fibroids may, for convenience of illustration, be divided into five categories, whose order of frequency is as follows: (1) Pathological conditions induced in the adnexa; (2) structural changes or degenerations in the tumor; (3) compression or dislocation of adjacent viscera; (4) general metabolic, cardiovascular and renal changes *not* due to pressure, in fact, occurring frequently with tumors of insignificant dimensions; (5) pregnancy.

Pathological conditions of the adnexa, that is, salpingitis with or without ovaritis, eventuating in pyosalpinx or ovarian abscess, constitute one of the most frequent of fatal complications.

Twombly[1] estimated that 50 per cent. of interstitial fibroids were complicated with affected tubes. Meredith[2] states, that an analysis of Tait's cases showed 54 per cent. of tubal and 46 per cent. of ovarian disease. In this connection Bishop observes: "It has appeared to me to be more frequently seen, when previous treatment of a so-called palliative kind such as curettage was employed."

It is generally recognized, that even simple adnexal infections yield a grave ultimate prognosis.

Complicating uterine fibroids they furnish the largest contingent of fatalities in unoperated cases, while they dominate the immediate and remote prognosis in those operated upon.

Structural changes and degenerations within the tumor, are manifestations of an inherent tendency in some forms of these growths, and although second in order of frequency to adnexal complications, represent the most rapidly fatal incidents occurring in the course of uterine fibroids.

I will only allude to the cancerous, the edematous, the cystic and the telangiectatic degeneration with its thrombotic concomitants, to dwell with some emphasis on the marked vulnerability to necrobiotic changes displayed by these tumors, the result of their precarious circulatory conditions.

This circulatory arrangement in uterine fibroids presents an extremely meager arterial supply, abruptly drained by spacious venous channels devoid of valves; the resulting retardation of the scant blood current is further augmented by the suppression of the rhythmical uterine contractions which, under normal conditions, maintain its circulatory balance.

Peripheral inflammatory changes of the slightest degree, have proven sufficient to completely obstruct the circulation in these growths.

Thus, existing under such precarious nutritional conditions and in contiguity with infected adnexa or endometrium, a uterine fibroid may at any moment, and with a probability increasing with its size and weight, become converted into a sloughing infectious mass by agencies offering the slightest impediment to its blood supply.

The numerous reports of this fatality, as detailed above, emphasize one contributory factor in its production, upon which sufficient stress cannot be laid, namely, the employment of the curette and other mechanical intra-uterine manipulations, such as tamponade, cauterization, etc.

The closer the tumor to the endometrium, the more pronounced the symptoms, which, according to older conceptions, indicate the employment of such mechanical measures, but, unfortunately, this very proximity to the endometrium, enhances the liability of these growths to fatal traumatic infections from such manipulations. The gravity of this occurence is typically illustrated in the following case: A robust, married woman of the laboring class, forty-three years of age, who had never been pregnant and who presented neither menstrual nor other clinical antecedents of import, was suffering from an uncontrollable metrorrhagia of three weeks' standing, which had been preceded by five months of amenorrhea. The classic ergot, ice and tampon routine proving ineffectual, the attending physician resorted to curettage, which was promptly followed by severe rigors, high temperature and painful distention of the abdomen.

When the patient came under the writer's observation, twenty-four hours later, she presented the clinical evidences of a general septic peritonitis. The uterus was globular, soft, and reached a point midway between the pubes and umbilicus. Its os gave vent to foul solid sloughs and necrotic fibrous masses.

Death occurred within the day, and the autopsy revealed necrosis of the uterus, originating in a sloughing fibroid. There was a general septic peritonitis with thrombophlebitis of the iliac veins.

It is superfluous to dwell upon the immediate and remote effects of visceral compression and displacements exerted by uterine fibroids, inasmuch as these mechanical factors constitute the familiar chapter of their classic manifestations, and I simply allude to them, in passing to the enumeration of a vital group of pathological phenomena, of special interest and deepest significance to the internist as well as to the gynecologist.

The *nutritional*, the *cardiovascular* and the *renal* derangements, due to the presence of these tumors, but independent of their mechanical influences of visceral compression and displacements, often accompanying growths that are free and of insignificant dimensions, represent the last observed and least understood of fatal complications incidental to the development of uterine fibroids.

The occurrence of an anemia, *not* due to metrorrhagic depletion; a myocardial degeneration of characteristic and uniform type and a premature general end-arterial fibrosis with renal changes, compose this clinical triad, whose resemblance in symptomatic features to other and familiar forms of constitutional derangements, has produced much speculation and more diagnostic and therapeutic deflection.

The premature arteriosclerosis, evidenced by edema, embolic processes, hemiplegia and albuminuria, like its concomitant myocardial degeneration, have not received the general recognition —outside of the dead house—which their serious prognostic import would suggest.

In 1884, Hofmeier called attention to the frequency of cardiac diseases in cases of abdominal tumors, especially with fibromyomata. He col-

1 Boston Medical and Surgical Journal, May 20, 1897.
2 British Medical Journal, 1890, Vol. 1, p. 897.

lected 18 cases in which sudden death occurred from heart failure; three of these showed fatty degeneration and 15 brown atrophy of the myocardium.

Following this report, Fehling, Leopold, Strassman and Lehman, Fleck and many others, amplified our knowledge on this subject by the publication of numerous illustrative fatalities from this complication, and yet not a single text-book nor elaborate special treatise on cardiac pathology presents the barest allusion to these cardiovascular degenerations as accompanying uterine fibroids.

Bitter experience alone has taught many surgeons to dread the effect of anesthetic and operative shock on these hearts of patients with advanced uterine fibroids.

Volumes have been written upon these various phases, thus depicted in sketchy outline; yet these bare outlines sufficiently attest, that the prognosis in unoperated uterine fibroids involves incalculable and uncontrollable possibilities of the gravest nature, which nothing short of timely radical intervention can obviate.

Such timely resort to radical surgery is not only prompted by the fatal tendencies of the unmolested tumors and the happy results attending their early operative removal, but by the utter impotence of every other curative or palliative measure hitherto employed or suggested.

Meadows, quoted by Bishop (p. 128), expresses his sentiments in the following: "There is in truth no folly greater than to attempt the impossible and no worse treatment of conscience and character than the habitual practice of unreality . . . and I am firmly convinced that to persuade women for months and years to swallow medicines, mostly of a depressing and debilitating kind, in the vain hope that we can thereby bring about the absorption or expulsion of a hard fibroid tumor, is not only unscientific, but unreal and dishonest."

Our knowledge of the action of drugs and of the nature of these growths has greatly increased, and, the clearer our insight, the more completely does it dispose of the false reputation dishonestly acquired in this direction by the whole list of remedies from ancient ergot to modern organotherapy.

The same applies to the electrolytic treatment as elaborated by the late Apostoli.

It has been my privilege on various occasions, to present before the gynecological section of this Academy and elsewhere, a number of specimens and reports of cases, showing not only the utter uselessness, but the dangers attending the employment of this procedure. The reported results claimed for these therapeutic attempts, like the belief in a climacteric retrogression of uterine fibroids, reveal themselves to-day as dissipated myths; the menopause in numerous instances, as shown by Kleinwächter, inaugurating a period of renewed activity or pathological change in the growths.

Péan says: "J'ai operé plus de personnes arrivées à la menopause que de malades plus jeunes." Of his 250 operated cases 100 were between fifty and sixty years of age and 70 between forty and fifty years.

Herrman reported a case in which a tumor of this kind first appeared at the age of sixty-four years, thirteen years after the menopause.

Grinsdale has met with a similar case at sixty-seven; Champneys at sixty-nine, while Tait had to remove the whole uterus for a sloughing myoma at sixty-seven, twenty years after the menopause.

On the question of retrogression, spontaneous or otherwise, Roger Williams, in an elaborate treatise on uterine fibro-myomata, states: "With regard to the alleged disappearance of these tumors—or, indeed, of any true tumor—by absorption, I have never been able to convince myself of its reality. The weak point in the history of these cases of reputed absorption of myomata, is that which relates to the diagnosis of the growth . . . and . . . it is my belief, that in all such cases we have to do with inflammatory pseudoplasms."

The possible dangers of the curette have already found emphasis; its utter uselessness, however, in controlling uterine hemorrhage due to the presence of fibroid tumors, has recently been explained by the studies of Theilhaber and Hollinger.

As a result of these investigations, our conceptions as to the nature of metrorrhagic complications in general and in connection with uterine fibroids in particular, have undergone a radical change. The alleged endometrial changes have been proven an unfounded hypothesis, which has given place to the recognition of the demonstrated myopathic and vascular degenerations of the uterine body bearing these tumors; the resulting projectile and circulatory insufficiency and not endometrial disease are productive of hemorrhages which no amount of intra-uterine scratching can permanently control.

Thus, one of these misdirected therapeutic efforts after the other, down to the long-cherished curette, has foundered on the rock of experience, and the question to-day in the treatment of uterine fibroids simply resolves itself into a decision between early radical removal and a perilous inactivity—perilous not only in immediate and remote dangers, but in fostering those elements which add fatality to late operation, or lend disappointment from necessarily imperfect results.

At best it condemns the patient to invalidism more or less marked, during the years which should be the most useful and active of her existence. This is the very reverse of the usual optimistic view taken by those practitioners, who are inclined to regard the exceptional benign cases as embodying the rule and the usual result the exception."

It is within the memory of most, when appendicitis, gastro-intestinal perforations, gall-bladder disease, pancreatitis and adnexal abscess were treated by poultice and opium; when extra-

uterine pregnancy was treated by morphine and electricity, and cures were reported. At the present time, to diagnose any of these conditions is to establish the indications for radical intervention.

Our knowledge of uterine fibroids places them in this same category; for just as in the conditions mentioned, treacherous calms will ultimately reveal themselves as incubation periods of serious potentialities, and a grave responsibility rests upon those who counsel delay, until what earlier would have been a safe operation of choice, has become, as a result of their counsel, a dangerous undertaking of necessity.

This responsibility is further enhanced by the fact that the immediate and remote operative results depend entirely upon the absence or presence of the complications which timely surgery alone can obviate, and against which every other therapeutic agent at present in our possession is powerless.

51 West Seventy-fourth Street.

LITERATURE UTILIZED.

Bishop, E. Stanmore. Uterine Fibromyomata.
Williams, W. Roger. Uterine Tumors, their Pathology and Treatment, 1901. Wm. Wood & Co.
Von Lorentz. Beitrag zur pathologischen Anatomie der chronischen Metritis. Arch. f. Gyn., Vol. 70, No. 2.
Fleck. Myom und Herzerkrankung. Arch. f. Gyn., Vol. 71, No. 1.
Theilhaber and Hollinger. Die Ursachen der Blutungen bei Uterus Myomen. Arch. f. Gyn., Vol. 71, No. 2.
Strassman. Encyklopädie der Geburtshülfe und Gynecologie, Article Myom.
Noble. Am. Journal of Obstetrics. Vol. XLIV, No. 3.

MEDICAL PROGRESS.

PATHOLOGY AND BACTERIOLOGY.

Change in the Aorta in Syphilis.—The following changes were discovered in several carefully studied cases of syphilis of the aorta by S. ABRAMOW (*Virchow's Archiv*, Vol. 178, No. 3). In the first recent case, thickening of the intima, consisting chiefly of spindle-shaped cells, imbedded in homogeneous, intercellular substance, was marked. Portions of this thickened intima were made up of mucoid substance and the superficial layers consisted of thick, hyaline fibers. In the adventitia there was proliferation of capillaries, whose intima was thickened and adventitia infiltrated with round cells which extended into the media. Four more advanced cases showed cicatrized areas in the media where the muscle bundles were almost completely destroyed. The process in the adventitia no longer progressed and the fibers had become sclerotic. The thickened intima was also cicatrized and replaced by coarse connective-tissue fibres of hyaline appearance. The elastic elements of the aorta were more or less destroyed by breaking up into homogeneous flakes. The difference between syphilitic and ordinary aortitis is only quantitative. The diagnosis of syphilis can only be made, if distinct gummata have developed in the walls of the vessel.

Relationship of Splenic Anemia to Other Blood Diseases of Childhood.—The homopoietic organs of the infant up to the sixteenth year in health, the cavities of all bones contain red marrow in varying proportions mixed with fat. H. BATTY SHAW (*Lancet*, December 3, 1904) says truly that before attempting to answer any questions in this matter, it is necessary first of all to discuss the general conditions of the blood in healthy infants. At birth, the hemoglobin amounts to 100 or 104 per cent. This amount progressively falls to the third week, when it reaches 55 or 60 per cent. After this, it steadily rises until the color index is approximately one. At birth the leucocytes vary from 18,000 to 30,000. By the sixteenth day, they fall to 14,000, at the sixth month, 13,000. By the end of the first year, 10,000. At the sixth year from 7,500 to 9,000, a total of 30,000 leucocytes in a healthy child under three years of age after feeding is said to be far from rare. At about the twelfth day, the polymorphonuclear cells are 60 to 70 per cent. At the third year the mononuclear equal these. The conclusions of this paper are that there is no sharp line of demarcation between any of the pathological groups which have been dignified by special names. Clinical evidence, furthermore, fails to separate these maladies, and the same may be said of the blood examinations, except in the advanced forms of pernicious enemia and leucocythemia. A closer study of the lymphoid tissues throughout the body, and particularly of those elements lying within the reticulum of each tissue, is necessary. It is probable that in leucocythemia, the marrow is involved in every case, whether it be of a lymphocytic, myelocytic or of a mixed type. The spleen and lymphatic glands may or may not share in the hyperplasia of the lymphoid cells which normally occur there. By metaplasia, the lymphoid cells appear to give rise as in pernicious anemia to various forms of erythroblasts and erythrocytes. What provokes this hyperplasia is not known, nor is it understood why it should be more readily excited in the young than in adults. That this not infrequently occurs is vouched for by the occurrence of splenomegaly in the adult without profound blood changes, which condition is unknown in the infant. In view of the utter impossibility of reaching any definite conclusion which is based upon clinical evidence or laboratory findings, it is undoubtedly justifiable to hesitate to attempt to differentiate between lymphatic leucocythemia and the splenic anemia of infancy.

Experimental Production of Lymphocyte Exudates.—This question has been studied in animals by A. WOLFF and A. v. TORDAY (*Berl. klin. Woch.*, December 5, 1904). They found that the injection of tetanus and diphtheria toxin in mice and guinea-pigs brings on an exudate of lymphocytes, which continues for from one to twenty-four hours after the injections. The promptness with which this artificial production appears seems to dispose of the objection to accepting the theory that active lymphocytosis can take place. These objections were, that it is not possible to produce it experimentally and that the lymphocytes might come from connective cells. Lymphocytosis and leucocytosis varies with different species of animals. The mouse is inclined to show a lymphocytocis, and substances which set up merely a polynucleosis in guinea-pigs, bring about a lymphocytosis in mice.

The Path of Infection in Pulmonary Tuberculosis.—A method of infection which is declared by its author to be theoretically possible and clinically probable, is suggested by M. WASSERMANN (*Berl. klin. Woch.*, November 28, 1904). He cites a number of cases which seem to show that in many cases of pulmonary tuberculosis, the infection reaches the lung through the tonsils and pharnyx through the cervical lymph nodes and the pleura. The pharyngeal mucous membrane allows the bacilli to pass through

when there happens to be present some local inflammatory lesion in the latter. The cervical glands then become secondarily involved. The infection travels down the lymphatics to the pleura, where it sets up a localized pleuritis, with the formation of adhesions. The bacilli are then able to enter the lung itself. Adhesions form most readily at the apex because in this locality there is less amount of movement during respiration. The preliminary symptoms are usually not observed by the patient, but any involvement of the pleura is noted immediately, and this is very sensitive. The shooting pains in the shoulder are therefore the first thing complained of by the patient. Physical signs at the apex are absent, unless one is able to detect friction râles. The greater frequency of apical lesions on the right side may be accounted for by the greater activity of the right shoulder, which favors the lymphatic current on this side.

On Clinical Combination and Toxic Action as Exemplified in Hemolytic Sera.—A research the expenses of which were defrayed by a grant from the Carnegie Trustees was undertaken by R. MUIR and C. H. BROWNING (*Proc. Royal Soc.*, December 10, 1904), with the object of determining whether, where different complements differ in their action as shown by the dosage, both of complement and of immune-body required, this difference depends upon differences in their combining affinities or upon differences in their toxicity. The action of hemolytic serum depends upon two substances, namely, (*a*) the immune-body, which is developed as the result of the injection of the red corpuscles of an animal of different species, and (*b*) the complement, a labile substance which is present in the serum of the normal animal, and which is not increased as the result of such injections. Ehrlich has pointed out the similarity in the constitution of complements and of various toxins, and the author's own observations support his views. One may, in the study of hemolysis, consider the complement as a toxin, the red corpuscles treated with the appropriate immune body as the object in which the toxin is to act, and the hemolysis as the indication of the toxic action. Ehrlich regards the toxin as consisting of two chief atom-groups; the heptophore, or combining group, and the zymotoxic; but in speaking of the action of sera he does not always carry out this distinction completely. For example, the efficiency of different complements as tested by their hemolytic or bacteriolytic effects is often taken as evidence of the degree of chemical affinity between the complements and the immune-body. But it is manifest that theoretically a complement may combine perfectly through the medium of the immune-body and yet produce little hemolysis, owing to absence of sensitiveness to the zymotoxic groups—combination or "complementing" may occur and yet hemolysis be deficient or absent. The results of the authors' investigations show that in the action of the complement there are two distinct factors, viz., (*a*) power of chemical combination, and (*b*) toxic action, corresponding to the "haptophore" and the "zymotoxic" groups of Ehrlich; deficiency in the action of complement does not necessarily imply want of combining affinity, but may be entirely due to the non-sensitiveness of the tissue molecule to the zymotoxic group. In the case of the three hemolytic sera studied the outstanding fact is the large dose both of immune body and of complement necessary when one uses the complement of the same species of animal as that whose corpuscles are being tested. In all three cases there is a relative non-sensitiveness of the corpuscles of the animal to the zymotoxic group of its own complement; hence a large dose of immune-body is necessary to bring into combination the amount of complement necessary for hemolysis. In one case (that of the ox) there is also a deficiency in the combining power of the complement with the receptors of the red corpuscles united to immune-body; from the two conditions acting together complete hemolysis cannot be obtained. No one has yet succeeded in producing an anti-substance or immune-body by injecting an animal with its own corpuscles or cells—such a body as with the aid of complement would produce destruction of these cells. This is manifestly a provision against self-poisoning and Ehrlich has applied to it the term autotoxicus horror. The resources which the authors have brought forward, if they were found to hold generally, would go to show that even if some substance should appear which acted as an immune body, there is a provision whereby the complement of an animal should produce comparatively little harmful effect.

PHYSIOLOGY.

The Molecular and Chemical Relationships of Transudates and Exudates.—The careful investigation of the physical chemistry of pathological fluids will probably furnish many valuable data from the standpoint of diagnosis and prognosis. A research in this field was conducted by K. BODIN (*Pflüger's Archiv*, September 30, 1904) with the following results: The molecular concentration phenomena of transudates and exudates are substantially the same. The osmotic concentration and the concentration of electrolytes in both exudates and transudates are approximately the same as those of normal blood serum. Just as in the latter, so in the former the concentration of the electrolytes presents slighter variations than the total concentration. It seems that the human serosa in both exudative and transudative processes always allow the inorganic salts to pass through in the same concentration, while the organic substances, according to the nature of the disease, are more or less held back. The content in ash is no reliable index of the content in electrolytes. From the standpoint of the NO-ions, transudates and exudates are neutral, like blood-serum, although like the latter, they both contain tritratable alkali. The author has not been able to discover any relation between the content in albumin and dry substance, on the one hand, and specific gravity on the other. There are no particular differences between the two groups of fluids as regards total proteids, serum-albumin, serum-globulins, ash and chlorides.

A New Method of Registering the Bodily Temperature.—The modern procedure of taking the rectal temperature at frequent intervals and regarding the highest temperature thus recorded as the maximal temperature for the day, is obviously imperfect, for it is possible that a still higher temperature may be reached in the intervals between the insertion of the thermometer. E. OERTMANN (*Pflüger's Archiv*, November 18, 1904) has devised a thermometer that will register the maximal temperature reached in any required period of time. The thermometer would necessarily have to be worn all this time in the patient's rectum; in order to render this possible and comfortable, the author devised an instrument similar to a hemorrhoidal pessary. It is shaped like a dumb-bell and is about 8 cm. long. One bulbous end is inserted in the rectum, the narrow part is firmly grasped by the sphincter ani, and the other

bulbous end is outside the anus. A thermometer registering the maximal temperature is enclosed in this instrument in such a manner that the bulb of the thermometer is contained in the inner end of the pessary and the reading may be readily observed from the outside. The instrument may be worn as long as may be necessary.

The Reduction of Methylene Blue by Nervous Tissue.—The method discovered by Ehrlich and recently applied by Herter, of studying the varying reducing capacities of the tissues, has been utilized by H. T. Ricketts (*Jour. Infect. Dis.*, November, 1904), in an investigation of the manner in which certain toxic substances affect the reducing power of nervous tissues. He used neurotoxic serum, that is, serum obtained by injecting extracts of nervous tissue from one animal into an animal of a different species. The blood serum of the latter then becomes highly toxic for the nervous tissues of the former animal. The author after intoxicating an animal with the foreign serum, injected methylene blue into its veins and then studied what effect the damaged nervous substance had in reducing the dye. He found that in this process of reduction the living cell is not essential, but that it may be brought about by emulsions of the tissue. The active reducing principles of these tissue emulsions consist of a thermolabile substance extracted by .85 per cent. NaCl, and a thermostabile substance closely associated with the solid tissue. Serum, old, fresh or heated at 70° F. for thirty minutes, may be substituted for the thermolabile substance as also may potassium hydrate. The reduction of methylene blue is accomplished by nascent hydrogen, which may have its source in fermentative processes, glycolytic or proteolytic. The action of KOH is referred to its catalytic properties. When serum is used as a reactivator, the reduction cannot be referred to ordinary ferments in view of the heat resistance of the substances contained. It may contain, in addition to ferments, some obscure catalyzing agents which act chemically.

PRESCRIPTION HINTS.

Fever and Sweats of Phthisis.—It is well known that consumptive patients support a high temperature without any apparent inconvenience. Frequently patients can be found amusing themselves having 102° F. of fever. In such cases, says Professor Tyonnel, it is not necessary to interfere. But in other cases, on the contrary, the fever is very high, fatiguing the patient, and treatment is necessary. Among the antipyretics at our disposal, antipyrine is the most innocent of all, and may be given with quinine:

℞ Hydrochlorate of quinine.....grs. v
Antipyrine. .....grs. x

Two to four daily.

If the antipyrine is not well borne by the stomach, it should be given with Vichy water. Pyramidon, lowers the temperature very quickly, but it frequently excites profuse sweating. Preference might be given to the acid camphorate of pyramidon in wafers of grs. x; three or four daily.

Phenacetin is also a good remedy, and may be associated with quinine and pyramidon:

℞ Phenacetin .....grs. v
Hydrochlorate of quinine.....grs. iv
Acid camphorate of pyramidon.....grs. vi

For one wafer. Three or four in the twenty-four hours.

Sometimes simple rubbing with eau de cologne or lavender spirit every evening acts favorably and is inoffensive.

Atropine is without doubt the most active agent, although not without danger. Some patients complain of dryness of the throat from its use, and say that they can no longer expectorate, while others present cerebral trouble.

Camphoric acid, white agaric, and ergot of rye often succeed and may be combined as follows:

℞ Belladonna powder.....gr. ½
White agaric powder.....grs. ii
Ergot of rye.....grs. iii
Camphoric acid.....grs. x

For one wafer. Two to three in the course of the evening.

Hemoptysis.—Injections of 40 drops of a solution of adrenalin (1-1,000):

or

Injections of gelatine, 1½ dram to 10 ozs.;

or

℞ Hydrochlorate of hydrastinin.....2 gr.
Water .....5 ozs.

A teaspoonful every hour;

or

℞ Hydrochlorate of hydrastinin.....½ gr.
Hydrobromate of quinine..... 1 gr.
Ext. of balladonna.....$^1/_8$ gr.

For one pill, two daily;

or

℞ Chloride of calcium..... 1 dram
Laudanum .....30 min.
Syrup of orange..... 1 oz.
Peppermint water..... 4 ozs.

A tablespoonful every two hours.

Pruritus of the Vulva.—This obstinate affection is only too frequent and often resists treatment for considerable periods of time. As is well known, it is most troublesome at night. The following mixtures may be tried:

℞ Hydrarg. chlor. corrosiva, Ammonii chlor. hydras. } aa. 2 to 3 grs. (.10-.20)
Emulsion amygdalæ amaræ....qs. ℥vi (180.0)

Robin and Dalché have reported considerable success with a mixture of

℞ Orthoformi..... } aa. qs.
Aristol..... }
Talcum..... }

or, if a pomade is desired,

℞ Menthol ..... 1 gr. (.06)
Guaiacol ..... ½ gr. (0.50)
Zinci oxidi..... ℥iiss (10.0)
Vaselin..... ℥i (30.0)

F. ung. Apply locally.

Asthma in Children.—

℞ Sodii arsenatis .....gr.⅓ (.002)
Potassii Iodide..... } aa. gr.30 (2.0)
Potassi bromidi..... }
Syr. aurantiæ flores... .....℥ii (60.0)

℥ss t.i.d.

Nothing New Under the Sun.—Sir Henry A. Blake, Governor of Ceylon, announced at a meeting of the Asiatic Society that Singalese medical books of the sixth century described 67 varieties of mosquitoes and 424 kinds of malarial fever caused by mosquitoes.

THE MEDICAL NEWS.

A WEEKLY JOURNAL

OF MEDICAL SCIENCE.

COMMUNICATIONS in the form of Scientific Articles, Clinical Memoranda, Correspondence or News Items of interest to the profession are invited from all parts of the world. Reprints to the number of 250 of original articles contributed exclusively to the MEDICAL NEWS will be furnished without charge if the request therefor accompanies the manuscript. When necessary to elucidate the text, illustrations will be engraved from drawings or photographs furnished by the author. Manuscript should be typewritten.

SMITH ELY JELLIFFE, A.M., M.D., Ph.D., Editor,
No. 111 FIFTH AVENUE, NEW YORK.

Subscription Price, including postage in U. S. and Canada.

PER ANNUM IN ADVANCE	$4.00
SINGLE COPIES	.10
WITH THE AMERICAN JOURNAL OF THE MEDICAL SCIENCES, PER ANNUM	8.00

Subscriptions may begin at any date. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in *registered* letters.

LEA BROTHERS & CO.,
No. 111 FIFTH AVENUE (corner of 18th St.), NEW YORK.

SATURDAY, FEBRUARY 11, 1905.

OYSTERS AND TYPHOID FEVER.

AT a time when the possibility that oysters may serve as a vehicle for the transmission of typhoid fever is a matter of doubt in the public mind, any new evidence on this point is of value.

The responsibility of the oyster, if established, is vast. Millions of bushels of these shellfish are annually grown and marketed on our coast and distributed through America and Europe without the least sanitary supervision. Many of the most celebrated varieties are sometimes bloated and bleached for market in streams which are in reality nothing less than open sewers. Is it possible that shellfish so treated occasionally become the carriers of disease? Are such sewage oysters at all responsible for the immense occurrence of sporadic typhoid fever which appears to be so baffling, not to say impossible to trace?

Dr. Daniel Lewis, Commissioner of Health of New York State, is on record as believing that typhoid fever is never caused by oysters. Recent U. S. Consular reports, widely quoted in the daily press, announce that a Commission, appointed by the Secretary of the Navy of France, has declared that oysters cannot transmit any disease to human beings. It is claimed that the oystermen themselves, who eat large quantities of shellfish, do not suffer to an unusual extent from typhoid.

But there is at least an equal weight of opinion on the other side of the question. We have the reports of Conn, Field and other capable observers in America, and of Houston, Klein, Bulstrode and many more in Europe, which go far to convince the reader of the guilt of the sewage oyster.

What shall we do about it? Shall we take the side of safety and advise our friends against raw oysters, or inform them that, before eating, their half shells should be analyzed? Because some oysters are little pockets of sewage, should we put a ban upon them all?

We do not want to produce a "scare." Oyster "scares" have occurred off and on for fifty years without producing any visible result beyond a temporary prostration of the business. But while we remain undecided, the oyster trade increases and typhoid fever multiplies.

The oyster business is a great and valuable asset to the people of this State, and as such, should be protected from the disastrous consequences of an unwarranted prejudice, but the public health comes first, and it is imperative that our oysters be kept absolutely pure.

For the protection of the public and the oystermen there is need of legislation based on a thorough sanitary investigation of the shellfish industry by persons of acknowledged and unprejudiced ability. We believe that the accompanying report (page 241 of MEDICAL NEWS), by Dr. George A. Soper, which we are enabled to publish through the courtesy of the Board of Health of Lawrence, offers an exceptionally strong argument in favor of this proposition.

THE ROENTGEN RAYS IN LEUCEMIA.

AT the December meeting of the New York State Medical Association, New York County Branch (see MEDICAL NEWS Society Proceedings, page 284, this week), Dr. Arthur Holding discussed the treatment of leucemia and pseudoleucemia by the X-rays. In *American Medicine* for December 24, 1904, there is an article by Dr. George Dock on the same subject. While the conclusions reached by these two writers are quite different, there is no doubt from the article of either that the Roentgen rays represent a very

interesting therapeutic factor in the treatment, especially of the conditions usually spoken of as leucemic. Dr. Holding has been able to find altogether some 45 cases of leucemia and pseudo-leucemia in the literature, and Dr. Dock has studied the original reports of 29 cases of genuine leucemia, though he admits that there are probably others in the literature which have not been clearly indicated by the title. It is perhaps the best possible index of the rapidity with which medical ideas are diffused at the present time and the ready zeal with which experimental observations in therapeutics particularly are repeated, that though one of the earliest cases of leucemia treated by the X-rays was reported by Dr. Senn, of Chicago, in April, 1903, there should be in the short space of scarcely more than a year and a half so many trials of his therapeutic suggestions.

Most of those who have used the X-rays in the treatment of these serious blood conditions insist that they must be employed very freely and without undue regard for possible evil results. Leucemia is a fatal affection and therefore justifies heroic treatment. It not infrequently happens that while a severe X-ray burn is healing, the process of improvement in the blood condition goes on almost uninterruptedly, though the exposures to the rays may have to be discontiued for some time. As a rule, the whole person is exposed to the action of the X-rays except the head, which may be protected by some form of flexible metallic cover. There is no doubt that, at least temporarily, beneficial results can be obtained in most cases. Unfortunately as yet, time enough has not passed to draw any definite conclusions as to the absolute curative effect of this form of treatment.

As to the contra-indications for the use of this remedial measure there are as yet no definite hints though some of its limitations are becoming known. Unfortunately in a certain number of cases toxic symptoms develop after a time and then the general condition may suffer severely in a way which may even resemble the state produced by acute sepsis. It is not uncommon to have leucemic patients during the treatment die suddenly or in a quasi-acute relapse of the disease, within a few days, after apparently progressive improvement has been going on for some time. This is the most serious consideration in the employment of this form of treatment. Even when it does occur, however, there has usually been a reasonably long period of improvement and of great comfort to the patient. In all cases there has been apparently some prolongation of life. The thought cannot be suppressed that the destruction of the superabundant white blood cells brought about by exposure to the X-rays, gives rise to toxalbuminous substances which prove eventually fatal to the organism.

It is worth while to continue the experimentation with these methods of treatment in order to determine the limitation of the benefits that may be obtained from them. In this as in other reports with regard to the use of the X-ray, unfortunately there was an overzealous enthusiasm on the part of those who reported some cases that raised unwarranted hopes of an absolute cure being possible. As Dr. Dock says, "In no case has observation been carried out long enough to speak of cure. The improvement must be considered functional and does not affect the original cause, nor in any permanent way the morbid histology of the disease." It must not be forgotten at the same time that certain other forms of treatment, and especially the employment of arsenic, has given some excellent results in leucemia at the hands of very conservative clinical observers. Even where the X-rays are employed, therefore, arsenic should not be neglected. The most hopeful cases for any treatment are those of beginning leucemia. If definite reports with regard to the effect of the X-rays in a certain number of these could be obtained, much more would be learned and more satisfactorily than in any other way. Here is an important field for investigation, open not only for those who are interested in X-ray work and who wish to add to our knowledge of the value of an important therapeutic agent, but also to the general practitioner of medicine to whom such cases come and who may secure the cooperation of a colleague in order to test so promising a remedy for what have hitherto been hopelessly fatal diseases.

INFLUENZA ONCE MORE.

THERE has been no doubt now for some years that influenza has become endemic here in America ever since the great epidemic of the early nineties, and that mild winters are likely to see it rage with special virulence. The present winter has proved no exception to this rule and in all the large cities of this country a great many cases of the disease, of rather severe type, have been reported. The bulletin of the Health Department of Chicago reported last week "that influenza is more prevalent and more fatal in Chicago this

winter than at any time since the epidemic year of 1891." In 1891 influenza was the chief agent in increasing the death rate of Chicago, more than one-fifth over that of the preceding year and numbers of the survivors have never since regained their former condition of mental and physical health.

Undoubtedly the most prominent feature of the first great epidemic was the characteristically intense depression which followed even mild attacks of the disease. During the present winter this same feature for the disease has been brought to particular notice once more. There is no doubt in the minds of many physicians who remember the first great epidemic that some of the lasting after-effects were due to an unfortunate haste in the convalescence of patients from the disease. At that time, its after-effects were as yet unrealized and patients were often permitted to be up and about before such procedure was justified by their physical condition. At the present time the most important element in the therapeutics of the disease is insistence on the fact that patients must be kept in bed until their pulse and temperature has become absolutely normal and must not be allowed to go back to their occupation until they have thoroughly regained their strength. This will sometimes seem to a busy man a needless interference with his business life. The effects of imprudence in this matter are too serious for trifling, however, and this must be clearly represented to the patients in order to make them appreciate the dangerous possibilities of the disease.

With regard to the possible limitation of the spread of the affection, a very interesting and important field for observation lies invitingly open. The Board of Health in Chicago has emphasized the fact that no possible precaution should be neglected which may tend to limit the spread of the disease. As far as possible people should be advised to keep out of the way of contagion. Visiting by friends should be peremptorily discouraged, and in the case of delicate persons already under the care of a physician for other reasons, all visits to persons likely to be ill from influenza, even though the affection may be called bronchitis, or some other apparently harmless name, must be forbidden. Dosing with remedies supposed to prevent or abort influenza are not only of no avail, but are actually likely to lower resistive vitality and make persons more prone to the disease. At times of epidemics it must not be forgotten that crowded street cars probably represent one of the most fruitful sources of the spread of contagious diseases, especially contagious respiratory diseases, in our large cities. Those who want to avoid the disease, should, as far as possible, keep out of the cars during the busy hours of the day and avoid attendance on crowded halls or assemblages in which there are likely to be many persons, some of them inevitably suffering from the prevailing affection.

In the present epidemic it has been noted, even more than almost any time in the last ten years, that the influenza does not confine itself to the respiratory mucous membrane, but that it is likely to work serious havoc on the mucous surfaces of the digestive tract. Under these circumstances, more than when the affection is only of the respiratory type, rest in bed and prolonged convalescence are necessary to prevent an unfortunate persistence of symptoms that may prove serious for the patient's subsequent health. In a word, the lessons learned in the past are that influenza must never be considered a trivial disease, and even when its symptoms are mildest, the depression that results is an index of how much the toxins of the disease have affected the central nervous system and how deep-seated has been an affection that otherwise seemed only a passing catarrh of mucous membranes. In this regard special stress must be laid on the fact that the reduction of temperature and the lessening of discomfort associated with the disease in the early stages by means of coal-tar products may easily tempt the patient to consider that the worst of the disease is over at a time when it is really only beginning to have its serious effect.

ECHOES AND NEWS.

NEW YORK.

Diphtheria Closes a School.—Dr. John T. Sprague, assistant superintendent of the Health Department in Richmond borough, has ordered the closing of Public School in Elm Park, because of the prevalence of diphtheria among the school children and other residents of that village. In the past two weeks forty-four cases of the disease have been reported to the Health Department.

In Memory of Dr. Thomas H. Manley.—In paying its tribute of profound respect to the memory of Dr. Thomas H. Manley, the Medical Board of the Harlem Hospital

RESOLVED, That by the death of Dr. Manley we have lost a highly esteemed and eminently proficient member of the Attending Staff. By his work at the hospital and his highly appreciated literary abilities, he has made his name known to the profession.

Resolved, That a copy of these resolutions be sent to the family of Dr. Manley, that it be published in

the medical press, and that these words be entered upon our minutes.—Theodore Kuene, W. H. Luckett, *Committee.*

Record of State Hospital for Incipient Consumption.—The first report of the State Hospital for the treatment of incipient tuberculosis, which was established by an act of the legislature at Raybrook, in the Adirondacks, was presented to the New York State Medical Society by Superintendent John H. Pryor. Although the institution has been open only since July 1 indications point to complete success. Of the eighty-two patients admitted, eleven have been discharged as cured. Of the remainder five have not been in the hospital long enough to justify any conclusions; nineteen have apparently recovered; the disease of thirty-four has been arrested, and all the rest show improvement. "The law creating this institution and under which it has been in operation for a period of six months," says Superintendent Pryor, "seems to be eminently satisfactory."

That "Kinesipathy" Bill.—The *Times* asks the question "Are the Doctors Observing?" and makes the following comment: "Viewed from such a distance that only its surface can be seen by the unaided eye, Senator Sullivan's 'Kinesipathy' bill looks like one to give a semblance of respectability and regularity to an assorted lot of rather dangerous quacks. For, if by some strange chance he should get it passed and signed, a multitude of 'professors' of rubbing and shaking would gain what is with the ignorant the enormous advantage of State recognition. Examined and certificated by a board chosen from among their own number and confirmed by the State Board of Regents, this whole great company of men and women who yearn to treat the sick—and get their fees—without taking the trouble to become doctors, would be safe from the occasional prosecution, which they are pleased to call persecution, and they would attain to a professional dignity that would be of enormous benefit to their business. It may be that Senator Sullivan has deeply studied the doings of the rubbers and the shakers, that he is competent to judge those doings, and that his introduction of the bill was the result of a warm and intelligent sympathy for suffering humanity. We hope so—we do, indeed. But we cannot help a doubt or two—little ones, which we are quite ready to abandon the moment a few real doctors give public expression to their approval of the measure. Till then we shall keep our little doubts and wonder how soon the medical societies are going to get—active."

Influence Brought to Bear on State Lunacy Board.—Strong influence is being brought to bear upon the Lunacy Commission by philanthropic persons to prevail upon that body not to complete the contract for the purchase of Isaac V. Baker's farm for a new insane asylum. If the Lunacy Commission refuses to entertain the appeal, those protesting against the acceptance of the Baker site will urge Gov. Higgins to interfere. The legislature of 1903 passed a special bill appropriating $50,000 for a site for the new hospital. When the Lunacy Commission, in the summer of 1903, directed experts to report on the different sites offered, it called specifically for information as to the water supply. The Commission last December voted to pay $42,000 for the Baker site, without any water supply, but with the understanding that an adequate water supply could be obtained for the site by an expediture of at least $30,000 additional. The question, therefore, is, did the Lunacy Board have any right to take action contemplating an expenditure of at least $72,000, when the legislature had appropriated only $50,000? It is contended that the Lunacy Board had no right to tie up the legislature to an additional expenditure for a water supply. While President Mabon of the Lunacy Board has declared that the proceedings for the buying of the site have gone so far that the Lunacy Board could not flop on the proposition if it wanted to, signs are not wanting that there is a possibility of the board dropping the site. It is suggested that some defect may be found in the searches for the site or for the right of way that trails through the two miles of other people's farms to the proposed water supply. It is known that despite the fact that the Lunacy Commission voted to buy the land the latter part of December, neither the searches for the site nor the right of way are complete. In fact, no searches have yet been produced for the right of way.

Hospital Not Too Gorgeous.—Professor Orth, Virchow's successor in the chair of pathological anatomy at Berlin University, has been lecturing before the Berlin Medical College on his recent tour in the United States. He is reported to have said the most beautiful hospital he ever saw is Mount Sinai Hospital in New York. When he first sighted it he thought it was a magnificent hotel—such a profusion of marble, such gorgeous staircases, walls, etc. The professor says he never saw such luxury as in the rooms for patients, with their splendid furniture, electric lights and bathrooms. As far as poor patients are concerned, Professor Orth thinks that although comfort may play a large part in making a patient's life happy it is out of place on the scale of the Mount Sinai Hospital, where it can only result in unfitting such men to bear with the hardships of their home and in making them in future thoroughly dissatisfied with their lot in life.

Dr. S. S. Goldwater, superintendent of the hospital, makes the following reply:

To the Editor of the New York Times:

A cable dispatch published yesterday quotes a statement by Prof. Orth, of Berlin, concerning the alleged overindulgence of poor patients in the wards of Mount Sinai Hospital. It is not easy to believe that so enlightened a man as Virchow's successor in the Chair of Pathology at the Berlin University really sees any social danger in the provision of decent comforts for the sick poor.

Prof. Orth's views are reported as follows: "The professor says he never saw such luxury as in the rooms for patients at Mount Sinai Hospital, with their splendid furniture, electric lights, bathrooms, etc. Prof. Orth thinks that, although comfort may play a large part in making a patient's life happy, it is out of place on the scale of Mount Sinai Hospital, where it can only result in unfitting such men to bear with the hardships of their home life and in making them in the future thoroughly dissatisfied with their lot in life."

Now, what are the facts? For the well-to-do, Mount Sinai Hospital, in common with other institutions of the same class, provides such comforts as these patients are willing to pay for. For this no apology need be made, especially since the surplus revenue, if any, derived from this source can be utilized for the furtherance of the charitable work of the hospital; and so far as the poorer patients are concerned, what shall be said? Mount Sinai Hospital was established and is maintained for the pur-

pose of rescuing those who have not the means to cope even for a short period with the heavy burden of an acute illness. For these the hospital provides clean beds, well-ventilated and well-lighted wards, expert voluntary medical attendance, wholesome food and good nursing. While in the hospital poor patients are protected from all the dangers and discomforts of overcrowding, of filth, of improper or insufficient food, and of ignorant or careless attendance.

In building and equipping a hospital, the sole aim is to furnish the means of fighting disease successfully, of putting the patient on his feet just as soon as possible, in order that he may resume his place in the social rank from which he springs. If a patient leaves the hospital with a new and higher appreciation of the value of air, sunlight, cleanliness, order, and decency, and with the determination to improve the conditions of his home, so that they may at least approximate decent standards, so much the better for the patient. Is not this the spirit which our social settlements are trying to engender, and may not the hospital properly take its place among the educational agencies making for social betterment?

No hospital in New York, so far as the writer is aware, is in a position to pamper its ward patients. If patients leave the hospital imbued with the sort of dissatisfaction of which Prof. Orth speaks, there is consolation in the fact that it is such dissatisfaction which has made our present civilization possible and which affords the promise of a higher plane of living for all humanity in the future.

PHILADELPHIA.

Bohemian Afternoon.—The Ladies' Auxiliary of the Jefferson Medical College gave a tea at the Horticulture Hall Saturday afternoon, the proceeds of which will be used to maintain and to supply books for the Library of the College.

To Lecture on the Care of Teeth.—According to the arrangements just completed Dr. J. Ashley Fraught will lecture to the public school children and their parents at the various schools during the month of March upon the care of teeth.

Professional Ethics.—In his address before the W. W. Keen Surgical Society, Dr. John H. Gibbon spoke to the members of this Society and the students of the Jefferson Medical College of professional ethics. After the address Dr. Gibbon was entertained at a banquet by the Society.

Epidemic of Smallpox.—This disease is again prevalent in York, Clearfield and Indiana counties. Dr. Benjamin Lee, secretary of the State Board of Health, attributes the outbreak to the activity of the smallpox contagion which was nurtured in the winter clothing packed away in closets and chests last spring.

New Hospital.—At 1234 North Fifty-fourth Street a new institution was opened which is to be known as the West Philadelphia General Homeopathic Hospital. It has ten free beds and a dispensary. W. E. Marbaker is president; Richard B. Morrel is vice-president; T. W. MacFarland is secretary, and Charles K. Hibbs is treasurer of the Board of Trustees. Dr. H. F. Williams is chief of the medical staff.

Meeting of the H. A. Hare Society of the Jefferson Medical College.—Prof. R. B. Preble, of the Northwestern University Medical School, Chicago, in his address before the Society and Members of the Faculty told how the pneumococcus by entering the blood stream produces constitutional effects without involving the lungs at all. By citing four cases he illustrated how utterly impossible it was to make the diagnosis until cultures were made from the blood. He laid great stress upon the sudden onset and the severity of pneumococcemia.

Wills' Hospital.—Realizing the importance of a society in which clinical workers in ophthalmology may be able to report their interesting daily cases and enjoy full and free individual discussion upon the same, and present theoretical and statistical papers upon ophthalmic subjects, Dr. Oliver, of Philadelphia, has recently organized the "Association of Clinical Assistants of Wills' Hospital." Membership by ballot is open to all those who have been or are connected with one or more of the clinical services in Wills' Hospital for a period of not less than three months' time. Meetings are held at the hospital at 8:30 P.M. on the first and third Wednesdays of each month. All who are eligible are invited to attend and join.

The Nathan Lewis Hatfield Prize for Original Research in Medicine Awarded by the College of Physicians in Philadelphia.—$500 will be awarded to the author of the best essay submitted in competition on or before March 1, 1906, subject: "The Clinical and Pathological Diagnosis of Sarcoma." Essays must be typewritten, designated by a motto or device, and accompanied by a sealed envelope bearing the same motto or device, and containing the name and address of the author. They must embody original observations and researches. The Committee reserve the right to make no award if none of the essays submitted is considered worthy of the prize. For further information address Francis R. Packard, M.D., Chairman, College of Physicians, 219 South Thirteenth Street, Philadelphia, Pa.

Meeting of the Eastern Section of the American Laryngological, Rhinological and Otological Society.—This meeting was held at the Jefferson Medical College with Dr. S. MacCuen Smith in the chair. During the morning session the following papers were read: "The Technic of the Radical Operation for Chronic Suppurative Otitis Media," by John D. Richards, M.D., of New York; "Report of a Case of Osteomyelitis of the Temporal Bone," by Charles W. Richardson, M.D., of Washington, D. C.; "Otitis Media Mucosa," by F. E. Sheppard, M.D., of Brooklyn, N. Y.; "Primary Epithelioma of the Auditory Canal," Joseph S. Gibbs, M.D., of Philadelphia; "A Case of Epithelioma of the Middle Ear," T. Passmore Berens, M.D., of New York; "Report of a Case of Mycosis of the Throat Treated with the X-ray," Lee Maidment Hurd, M.D., of New York. There were nine other papers read beside the last one mentioned during the afternoon session.

Regulations adopted.—At the last meeting of the Milk Exchange it was

Resolved, That the Philadelphia Milk Exchange urges upon its members and all engaged in producing and distributing the article, that no milk be purchased or sold unless conforming with the following rules: (1) Cows shall be healthy and free from disease. (2) Milk from any cow suspected of disease shall be discarded from the herd milk. (3) That the dairyman and his household are free from disease. (4) Pails used in milking should have a covered top, with small openings protected with a wire sieve or a cloth strainer. (5) All cans and dairy utensils shall be scrupulously clean before using. (6) No

milk shall be sold from living rooms or rooms connected with the stable. (7) Absolute cleanliness of bottles and bottling apparatus. (8) There should be a clean room in which the bottles are filled. (9) Clean boxes for storage of the bottles or cans, and drains connected to avoid sewer gas. (10) Delivery wagons to be thoroughly cleaned both inside and outside.

Appointments—The Governor sent to the Senate the following names of the persons who are to be members of the board of Medical Examiners for three years: Dr. W. D. Hamaker, of Meadville, and Dr. M. P. Dickeson, of Glen Riddle, representing the Medical Society of Pennsylvania; Dr. J. C. Guernsey, of Philadelphia, and Dr. Edward Cranch, of Erie, to represent the Homeopathic Medical Society; Dr. William Rauch, of Johnstown, and Dr. J. M. Louther, of Somerset, to represent the Eclectic Medical Society. Dr. John H. Jopson has been elected a member to the surgical staff of the Presbyterian Hospital. Dr. W. W. Keen, Dr. J. William White, Dr. John B. Roberts, Dr. E. E. Montgomery, Dr. Orville Horwitz, Dr. John M. Baldy and Dr. Charles P. Noble have been appointed consulting surgeons to the Jewish Hospital. The consulting physicians appointed are, Drs. John H. Musser, James Tyson, J. C. Wilson, Roland G. Curtin, Alfred Stengel, J. M. Anders and Lawrence F. Flick. Dr. J. P. Crozer Griffith has been elected consulting pediatrist. Owing to the increasing number of patients in this hospital many additional surgeons and physicians were elected.

Meeting of the Academy of Surgery.—This meeting was held February 6. Dr. A. D. Whiting presented a paper on "Gangrene of the Scrotum." In none of his cases were the testes injured by the condition; he maintains that castration should not be performed unless these organs are extensively involved, and even then he is rather inclined to allow nature to get rid of them. In treating these cases incisions through the dartos should be made in the parts involved. Dr. Adinell Hewson showed "A Mulberry Calculus obtained from the dissecting room." He said that he was informed by the attending physician that the stone produced no symptoms during life. Owing to the absence of Dr. DeForest Willard, his paper was read by Dr. Hodge. This paper was entiled "Duodenal Ulcer; Gastro-enterostomy." The patient's gastric contents showed a hyperacidity and there was blood in the stools. From these facts the diagnosis of duodenal or gastric ulcer was made. The patient died soon after the operation, and at post mortem an ulcer was found in the duodenum which had perforated all the coats of the intestine, but by adhesions to the gall-bladder the contents of the organ did escape. Dr. A. B. Craig and Dr. A. G. Ellis read a paper entitled "An Experimental and Histological Study of Cargile Membrane." Dr. Craig found that the peritoneal fluids and the intestinal peristalsis dislodged the membrane so that it was necessary to fix it with sutures. He learned that when the Cargile membrane was either placed on denuded or on undenuded surfaces of the peritoneum adhesions formed just as in cases where no membrane was used. After removing the intestine upon which it had been allowed to remain for a certain length of time, the membrane could not be identified macroscopically. To determine whether the material was absorbed he placed a piece of chromicized and a piece of non-chromicized Cargile in separate glass tubes, which were then introduced into the peritoneal cavity of animals and allowed to remain for seven days; upon removal the unchromicized was dissolved but the chromicized was intact macroscopically. He then decided to determine whether the solvent action was due to the peritoneal fluids or whether it was due to the leucocytes, and accordingly placed the membrane in celloidin capsules, which fluids could permeate, but leucocytes could not. These capsules, after remaining in the peritoneal cavity, were found void of cells but contained a milky fluid; the chromicized membrane was almost dissolved. In concluding his part of the paper he said the Cargile may be of value to protect and prevent adhesions around wounded nerves, but it is of no value to prevent adhesion in the abdominal cavity. Dr. Ellis in the histological study of the tissue on which the Cargile was placed, found that it invariably produced an inflammation and that newly formed tissue was always present and in many instances invaded the Cargile. In one section he found a giant-cell between the Cargile and the nerve to which it was applied; the cells contained a fragment similar to Cargile. He believes the membrane is destroyed by lysins. In discussing this paper, Dr. Coplin reminded the Society that even non-vascularized bone from the same individual when introduced at any point in that body will act as an irritant, therefore Cargile could not possibly be put in the body without giving rise to irritation. Dr. Deaver told the Society he had used the Cargile extensively, but that all of his patients recovered, so that he was not able to see the changes it produced. Dr. W. W. Keen reported "A Case of Rupture in the Continuity of the Tendon of the Long Head of the Biceps." He overlapped the tendon and sutured with chromicized catgut. The injury was sustained in an effort to catch a hand-ball.

CHICAGO.

Contributions to Hospital Fund.—Up to the present writing the contributions for the Iroquois Memorial Association Hospital Fund amount to $11,959.

Report of Chief Lodging House Inspector.—The report of the Chief Lodging House Inspector informed the State Board of Health that there are no longer to be found in Chicago the disease-breeding spots that were designated as basement lodging houses, and other lodging houses that had double-deck and triple-deck beds, with small air space and poor ventilation.

Educational Campaign Against Disease.—An educational campaign against disease is to be started, through the high schools, by the department of pathology and bacteriology of the University of Chicago. It is hoped to arouse the students to take interest in practical work of a bacteriological nature, such as experimenting to demonstrate bacteria in air, water and milk.

Officers of State Board of Health.—Dr. George W. Webster, of Chicago, was recently re-elected president of the State Board of Health at its annual meeting. Other officers elected were: Dr. J. A. Egan, of Springfield, secretary; and treasurer, Dr. P. S. Wessel, of Moline. The Board mapped out aggressive plans to fight tuberculosis in every nook and corner of the State, giving its hearty approval to a bill recently introduced in the legislature that provides for the establishment of a State hospital for consumptives.

First Aid.—Dr. Nicholas Senn gave a lecture recently to the newly organized American White Cross First Aid Society. Among other things, Dr. Senn said that "Should you intercept a stray bullet, do not permit anyone, not even your wife, to wash the wound, but insist on the application of antiseptic absorbent cotton, which you or your companion is expected to have in an inside pocket." Several hundred persons attended the lecture, which was illustrated by the application of a bandage to a wound and the making of a sling for a fractured arm.

Bust of Dr. Fenger.—A memorial bust of Dr. Christian Fenger will be formally presented to the Chicago Medical Society soon by members. The bust is to be placed in the Cook County Hospital, where Dr. Fenger was a member of the surgical staff for twenty years. Dr. Ludwig Hektoen, Chairman of the Committee of Arrangements, states that there will be enough money left after paying the $3,000 for the bust to establish a Christian Fenger fellowship in one of the local medical colleges. It has not been decided which school is to be the recipient, as Dr. Fenger was a member of the faculty of three.

Plea for State Sanitarium.—In a lecture recently delivered at the Laflin Memorial Hall, Dr. George W. Webster made an eloquent plea for a State Sanitarium for consumptives. He said that unlimited funds would be at hand if the State expected an invasion of a force that would kill 8,000 people in a year; still it has made no move to establish a sanitarium for the care of sufferers from tuberculosis. After showing how heavy drinkers were quick victims to the disease, he dwelt at length on how tuberculosis could be prevented. He closed by asking that his hearers use their influence to secure a sanitarium for tuberculous patients.

Merit Bill for Medical Staff.—A bill placing the medical staff of the Cook County Hospital under civil service was introduced in the Illinois Senate by Senator Carl Müller, of Chicago. The measure is calculated to carry out the plan of President Brundage, of the County Board, of apportioning the members of the medical staff among the various recognized schools of medicine. It provides that "all such physicians and surgeons who serve without compensation shall be appointed only for a term of six years, and that the physicians and surgeons usually designated and known as internes shall be appointed only for a term of eighteen months." It is further provided that the President of the County Board may appoint a consulting staff of physicians and surgeons. A medical staff under the present system is selected every two years.

CANADA.

Northwest Autonomy and the Canadian Medical Profession.—The Government of the Dominion of Canada is about to create two provinces out of what has to this date been denominated the Northwest Territories, and a writer in *The Toronto Globe* calls the attention of the Canadian medical profession to the matter, believing that same concerns them to a very great deal. This medical man argues that as the Northwest Territories were acquired by purchase from the Hudson Bay Company by the Dominion Government, that the medical profession throughout all of the older provinces of Canada have a great deal of concern in the creation of the two prospective provinces, and calls upon them to see that power is not conferred upon the two new provinces by the federal authorities to exclude practitioners from entering therein after the autonomy has been granted. We do not think that many of the profession of medicine in the older provinces will take much notice of this appeal, but will rather prefer to let the profession in the Northwest have full control over all matters pertaining to the registration and practice of medicine in that important section of the Dominion of Canada.

Sacrilege in a Montreal Maternity Hospital.—Montreal medicine is a unit in denouncing the gross and brutal action of a high constable and his special assistant who, last week, with a warrant in their possession, invaded the Montreal Maternity Hospital, and in a most sacrilegious and unrighteous manner searched not only the public and private wards, but unceremoniously even stripped the coverings from the lying-in bed. It is monstrous that such a thing could have happened, or that the doctors and attendants of the institution, who had assured the two myrmidons of the law that no such person as they sought was present in the hospital, did not take it upon themselves to forcibly eject these brutes in human attire, who forcibly pursued their search, not even stopping at the apartments of the nurses or private patients. The editorial in the *Montreal Medical Journal*, which condemns their action, fairly boils over with righteous indignation and righteous wrath at the unmitigated scoundrelism exhibited by these minions of the law, and justly calls for their heads in an official envelope, which is certainly flat enough for the purpose. The authorities of the maternity immediately took the matter up with their solicitor, and will push it to the bitter end, being satisfied with nothing short of the dismissal of the two men in question. Pity 'tis that the private ward patients cannot get damages from those who issued such a warrant.

Canadian Medical Men and the British Medical Act (1858).—It was never brought so forcibly to the minds of the members of the Canadian medical profession that the British Medical Act was not all that it should be so far as Canadians were concerned, than at the time of the South African War. Then Canada furnished several contingents to help out British arms, but many Canadian medical men were refused commissions, and even a field hospital was refused on the ground that it was contrary to the British Medical Act of 1858. In 1903, and again in 1904, Lieutenant-General Laurie, a member of the Imperial House of Commons, who was formerly a member of the Canadian House of Commons, had a bill before the Imperial Parliament seeking to remove the disability whereby colonially trained physicians and surgeons could not receive appointments in his Majesty's army and navy. A copy of this bill has recently been sent to all of the local medical societies of Canada, so that, should Canadian physicians and surgeons desire to assist General Laurie when next he introduces this measure into the British Parliament, an expression of their opinion will be in the General's hands, who will have evidence to produce that the medical profession of the Dominion of Canada, desires that colonially trained physicians and surgeons should have admission to the army and navy of the empire same as those educated at home.

The Lepers of Canada.—Dr. Smith, the medical superintendent of the Leper Hospital at Tracadie,

N. B., has presented his annual report to the Dominion Government. According to this the Register of the Lazaretto shows that there are now fifteen inmates, ten males and five females. The number in the first stage of leprosy is six, in the second seven, and in the third one. The youngest patient is ten and the oldest patient is sixty-two years of age. There were four deaths during the past twelve months, and three new cases were admitted, one from without the province of New Brunswick. Of those on the Register, nine are of French origin, three Icelandic, and three of English origin. During the year Chaulmoogra oil, in combination, introduced two years ago, has been freely used by the inmates with beneficial success. Recently, Dr. Smith took a tour of investigation through adjoining parishes, and the doctor found one undoubted case of true leprosy. He also found three persons showing premonitory symptoms. Notwithstanding this he reports that leprosy is decreasing, but after careful investigation states that he fully believes in the communicability of the disease by contagion.

GENERAL.

Longevity.—A German statistician calls attention to the fact that the increased longevity in Europe within the last fifty years is more conspicuous in the case of women than of men.

Boston Societies.—Boston Medical Library in conjunction with the Suffolk District Branch of the Massachusetts Medical Society. The last meeting was held at the library February 1. Dr. F. B. Harrington was in the chair. The subject for discussion was "The Results of the Treatment of Cancer in and about the Mouth. Dr. Fred. C. Cobb spoke on the importance of early diagnosis. Dr. Farrar Cobb and Dr. Channing Simmons gave the results of cases operated on at the Massachusetts General Hospital from 1895 to 1900. Dr. Howard A. Lathrop and Dr. David D. Scannell gave the results at the Boston City Hospital. Dr. E. A. Codman spoke on the use of the X-ray in post-operative treatment.

International Congress.—The next international Congress of Medicine will be held at Lisbon, April 19 to 26, 1905. The national committee of the United States is constituted, according to the official bulletin, as follows: President, Dr. John H. Musser, of Philadelphia; secretary, Dr. Ramon Guiteras, of New York; members, Dr. Frank Billings, of Chicago; Dr. William Osler, of Baltimore; Dr. W. W. Keen, of Philadelphia; Dr. Frederick Shattuck, of Boston, and Dr. Abraham Jacobi, of New York. On the motion of Dr. Bergoine, the executive committee has decided to make medical electricity a separate branch of Section IV. There is every prospect that the congress will be an eminently successful one. The number of promised communications at present amounts to 188.

Suicide.—The announcement of the Mutual Life Insurance Company that among its policyholders last year there were 162 suicides would seem surprising, writes the *Times*, if the latest available statistics did not warrant the conclusion that it was a relatively low rate in proportion to the number of those insured. Prof. Frederick L. Hoffman's investigations for the information of one of the large life insurance companies show that even in this country, where the conditions of life are a good deal easier than in many, suicide is a factor in the equation of human mortality which must be reckoned with, and is not so abnormal a happening that it does not admit of statistical classification in actuarial calculations. Moreover, it is progressive. In fifty of the principal American cities the suicide rate for the eleven years 1893 to 1903, inclusive, was 16.30 per 100,000 of inhabitants; in 1903 it was 18.39. During the period of 1892 to 1902, inclusive, New York (Manhattan and the Bronx) had a suicide rate of 21.6 per 100,000. In Hoboken, just across the river, it was 27.14; in St. Louis, 25.87; in Chicago, 23.64; in Milwaukee, 20.37; in Cincinnati, 18.75; in Newark, N. J., 18.25; in Brooklyn, 17.13. Nearly all other cities fell materially below the Brooklyn rate, except Oakland, Cal., with 23.35. It is popularly assumed that the suicidal tendency is stronger in France than elsewhere, but this does not seem to be borne out by statistics. The French suicide rate for ten years was 23.6, which is lower than that of Saxony, Denmark, and Schleswig-Holstein. The Paris rate is 42; but that of Dresden is 51, and that of Berlin 36. That the average of suicides in the United States is only about 3.5 per 100,000 is cause for congratulation, notwithstanding the fact that in Russia, Ireland and Spain it is still lower.

Health on the Isthmus.—Reports concerning conditions as to health on the Isthmus of Panama have been "cruelly exaggerated," according to a long cablegram received at the War Department February 4, from Governor George W. Davis at Panama. In the families of the Americans employed on the Isthmus, Governor Davis says, there have been three cases of yellow fever and only one case of death. Of the employees hired on the Isthmus, five have been stricken, but only one has succumbed to the disease. The total number of cases of Americans not employed on the Isthmus, including those of the cruiser Boston, where the disease broke out two weeks ago, have been nine cases and five deaths. Other cases originating on the Isthmus and reported elsewhere number seven, with two deaths. The total number of cases originating on the Isthmus is thirty-two, of which nine have proved fatal. Six cases are now convalescing. Since the American occupation, the dispatch says, two cases of smallpox have been reported, but none has originated there. There is no typhoid or plague. Of the 4,000 employees only three per cent. are ill of any disease. Governor Davis says that the sanitation of Panama is progressing as efficiently as in any city of the United States. Until the completion of the waterworks, in about three months, the water supply from the wells and springs will be sold. Col. Gorgas, who was instrumental in dealing with the sanitation of Havana, is in charge of the work at Panama, and it is his opinion that the material and equipment now on hand are entirely sufficient for controlling the yellow fever. Col. Gorgas required about eight months to obliterate 5,000 cases of yellow fever in Havana, and it is believed that he can secure its complete eradication in Panama soon.

Medical Society of the Missouri Valley.—The seventeenth semi-annual meeting of this association will be held in Kansas City, March 23 and 24. An excellent program is being arranged for this occasion, and the profession, which is noted for its hospitality, will keep open house for the visitors upon this occasion. Dr. S. Grover Burnett, of Kansas City, is president of the society, and Dr. C. Lester Hall, chairman of the arrangement committee. Following is a list of the papers which have already

been given a place upon the program: Paper, Geo. W. Cale, Springfield, Mo.; Surgical vs. X-Ray Treatment in Cases of Rodent Ulcer and Epitheliomata of the Face, with Demonstration of Operated Cases, C. O. Thienhaus, Milwaukee, Wis.; Transverse Ribbon-shaped Cornea Opacity, J. M. Sherer, Kansas City, Mo.; Rest in the Treatment of Select Cases of Mental Disease, F. P. Norbury, Jacksonville, Ill.; Paper, E. N. Wright, Olney, I. T.; Surgery of the Spine, C. E. Black, Jacksonville, Ill.; Synchronous Extra- and Intra-uterine Pregnancy, with report of case, D. C. Brockman, Ottumwa, Ia.; Remarks on the Surgery of Umbilical, Femoral and Inguinal Hernia, with reported cases, J. Young Brown, St. Louis; Case of Choroiditis, probably due to Necrosing Ethmoiditis, W. W. Bulette, Pueblo, Colo.; Pelvic Inflammation of Peri- and Parametritis, H. C. Crowell, Kansas City, Mo.; Renal Affections Simulating Abdominal and Pelvic Diseases, J. Block, Kansas City, Mo.; The New-Born Infant; Its Care and Management, A. D. Wilkinson, Lincoln, Neb.; Anesthetics, Dora Greene-Wilson, Kansas City, Mo.; Some Observations upon the Treatment of Inguinal Hernia, Prince E. Sawyer, Sioux City, Ia.; Functional Diagnosis of Kidney Diseases, A. C. Stokes, Omaha, Neb.; Hypertrophy of the Thyroid Gland, T. E. Potter, St. Joseph, Mo. A feature of the program will be a symposium on puerperal fever, opened by Dr. Robert T. Sloan, of Kansas City. A cordial invitation is extended to the profession and special rates will be granted by the railroads. Further information and copy of the complete program, which will be issued March 10, may be obtained by addressing the secretary, Dr. Chas. Wood Fassett, St. Joseph, Mo.

The Japanese Medical Corps.—The statistics which have been given out of the astonishingly low mortality in the Japanese army from disease since the present war began warrant the conclusion that the organization of the medical corps and its equipment are the best ever known in a military establishment. Since it took the field Gen. Oku's division has had only 40 deaths from disease. Of 20,642 cases of sickness treated, 18,500 recovered in the field. Only 5,609 had to be sent back home as more seriously sick than could be advantageously treated in field hospitals, and of these the total mortality is said to have been 40. Only 133 cases of typhoid fever have been reported, and 342 of dysentery. The sickness among the troops recruited for our little Spanish war reached enormous proportions, and the deaths were nearly 70 per cent. of the cases, warranting a grave prognosis when taken in hand. It is natural, perhaps, to conclude from such comparisons, and especially when the Japanese records are contrasted with the disgraceful zymotic statistics of the Boer war, that the Japanese are immeasurably ahead of us in their knowledge of camp hygiene and field medicine. Probably they are. But the differences in results cannot possibly be explained by attributing them to larger knowledge and greater skill and fidelity on the part of the surgeons of the Japanese army, as compared with those of our own and the British military establishments. This is an impossible supposition. That the Japanese organization is better we do not doubt, but such differences as are discoverable do not begin to explain why the percentage of enlisted men incapacitated by sickness is so low. The reason for this will probably be found in the willingness of the Japanese soldier to cooperate with the medical staff in doing what he should to safeguard his own health. His diet is simple and well ordered; he is temperate; he prudently avoids a hundred dangers to which the American and British soldier is indifferent; he does not plunge headlong into vice the moment he gets outside his camp limits, and in his dainty way he comports himself at all times like a soldier and a gentleman. This is the difference. The Japanese is temperamentally an exponent of the simple life, and while apparently perfectly willing to die in the way of duty, he sets the American and the British volunteer an example of prudence and self-restraint which reduce the anxieties and responsibilities of the army surgeon to the least expression.

Ship Surgeons.—The dean of the surgeons of the Atlantic fleet, if not among the steamships of the world, is Dr. J. Fourness Brice, of the steamship Cymric of the Boston-Liverpool service of the White Star Line. Dr. Brice has practised his profession on shipboard since 1859. He was born in England in 1826, was graduated from the Royal College of Surgeons in London in 1850, and from the College of Physicians and Surgeons, New York, in 1858. His connection with the steamship service came about as the result of an accident. He had already come into extensive practice in South Yorkshire, having followed in the steps of a kinsman lately deceased. When one day on a foxhunt his mount fell, and the young physician received an injury that prevented his continuing in practice. He came to America, and, after an extended stay, returned as surgeon of the American steamship Congress. For two years Dr. Brice was an interne in a London hospital. Then he tried to reassume his Yorkshire practice, but his health was such that he could not go on, and he decided to look for a position as ship's surgeon. He secured an appointment to the Scotia of the Cunard Line, with which he continued for thirten years. In 1879 his allegiance was transferred to the White Star Line. After sailing on various vessels he was assigned to the steamship Germanic, on which he served for twenty-three years. Very recently he left that vessel and was transferred at his request to the steamship Cymric. Dr. Brice, in spite of his seventy-eight years, is an active, progressive physician. When he is ashore in America he spends most of his time in the hospitals in order to keep abreast of the times. When the ship is at Liverpool, however, he betakes himself to his Yorkshire home, where he enjoys the freedom of the moorlands and the society of his wife and two daughters. Dr. Brice has crossed the ocean nearly 900 times.

Another very well-known medical man at sea is Dr. R. Lloyd Parker, late past assistant surgeon in the United States Navy, who is now attached to the American liner St. Louis. Dr. Parker is a graduate of the University of Edinburgh in the class of 1879. As soon as he completed his hospital course he became a surgeon on a ship of the Allan Line for two trips, and then joined the staff of the American Line. During these years he has made nearly 600 transatlantic trips. Throughout the Spanish-American War Dr. Parker was a past assistant surgeon in the navy, attached to the United States steamship St. Louis. For his services in conveying the wounded of Admiral Cervera's fleet from Santiago to Portsmouth, N. H., Dr. Parker received the thanks of the Spanish Government.

Dr. O'Loughlin, of the Oceanic, a graduate of the Royal College of Surgeons and Physicians in Dub-

in New York, entered the White Star service in 1872 upon the conclusion of his hospital course. He has made more than 700 trips across the Western ocean. He has done a good deal of surgical work at sea, his last major operation being an amputation at the hip joint. Next to Dr. Brice, Dr. O'Loughlin has been longer at sea than any other transatlantic surgeon.

The ship surgeon, however he may devote some of his time to the amenities of civilized life, cannot be the social butterfly he is sometimes represented as being. Indeed, most surgeons see the passengers only at the table over which they preside, and occasionally on the promenade deck. The ship surgeon leads, in fact, practically the same kind of life as his confrère ashore. He is a busy man. The larger vessels seldom carry fewer than 500 people on each trip, and in the summer months 1,500 would be nearer an average number.

OBITUARY.

Dr. JAMES A. FREER, a well-known physician of Washington, D. C., was found dead last week outside of Washington. He was forty-six years old.

Dr. AUGUSTA SMITH, a widely known woman physician, died at her residence in St. Louis on February 4, as the result of being struck by a street car. Dr. Smith was seventy-three years old, and a graduate of the Bennett Medical College of Chicago. She was born at Fulton, N. Y.

Dr. WILLIAM H. RISK died at his home in Summit last week after a long illness. He had been president of the Board of Health of Summit for two years. He was born in 1842 and was educated in Lafayette College and at the University of Pennsylvania. He lived in Philadelphia many years and went to Summit in 1873. He was consulting physician to the Fresh Air and Convalescents' Home at Summit, also a member of the Morris County Medical Association and the New Jersey State Medical Society.

Dr. HOMER L. BARTLETT, one of Brooklyn's most prominent physicians, died February 2 in Thomasville, Ga., at the age of seventy-five years. Dr. Bartlett had been in poor health for some time, and four days ago he went to Thomasville, hoping that he would be benefited. He was born in Chittendon, Vt., in 1830, and was educated at the Bakerfield Academic Institute. He came to New York immediately and entered the College of Physicians and Surgeons under Dr. Willard Parker. In 1855 he took his medical degree, and the next year he made a name for himself by going into the town of New Utrecht, after all the physicians of the town had been killed by the cholera or had fled, and putting a stop to the plague by heroic work night and day. In 1857 he moved to the village of Flatbush, Brooklyn, and since that time was perhaps the foremost citizen of that part of Brooklyn. He organized the first health board Flatbush had, its original police board, the first village gas company, its water works and the Midwood Club. He was also the first trustee of the Erasmus Hall Academy, now a part of the city school system. Dr. Bartlett was vice-president of the Kings County Medical Association, a member of the American Medical Association, of the Association for the Advancement of Knowledge, of the State Charity Aid Association, and other associations, State and local. In late years Dr. Bartlett interested himself in compiling histories of the traditions and legends of Flatbush and Long Island. He is the author of a number of books.

SOCIETY PROCEEDINGS.

MEDICAL SOCIETY OF THE STATE OF NEW YORK.

Ninety-ninth Annual Meeting, held at Albany, January 31, February 1 and 2, 1905.

The President, Dr. Hamilton F. Wey, of Elmira, in the Chair.

SECOND DAY—FEBRUARY 1ST (*Continued*).

(Continued from Page 229.)

Railway Spine.—Dr. Edward B. Angell, of Rochester, N. Y., said that the use of this term, ever since Erichsen opened up this important chapter of accident neuroses for law and medicine, has not become any more definite than it was at the beginning. As a matter of fact Erichsen's classical article has been the guiding star of courts as well as of legal and medical experts and unfortunately very indefinite ideas as to true pathology have resulted. Much is said of concussion of the spine and of congestion of the spine, but little of the true morbid conditions that develop have been studied out. Dr. Angell then detailed some illustrative cases which served to show that as a rule these accident neuroses present manifestations out of all proportion to the injury which has been received. In most cases, it is a mental and not a bodily state that develops as the result of the accident. This is very clear from the shifting of tender points from the complaint of pains here and there throughout the body without any definite location of pathological conditions. Such symptoms are found even in cases in which there is no question of litigation for damages, and more than once they have been seen to persist long after settlement has been made.

Imperative Idea.—What develops in most cases is an imperative idea, a true delusion as to physical condition. The accident is often not the occasion of the symptoms, but the patient's opportunity. This imperative idea may be overcome sometimes by hypnosis and the curatively suggestive effect of money damages is well known. This by no means necessarily implies that the patients are only pretending as to their symptoms. The railway spine is unfortunate, for it is really a brain injury, though of course for this there may be a physical basis. What is needed is a more careful study of these cases and less theory with regard to them. On the other hand, medical experts should come to the realization of their duty to give testimony not for their patients as clients, but according to the reasons they are able to obtain for definite medical conclusions. One unfortunate effect of the abuse of medico-legal testimony is that at times the imperative idea in the patient's mind becomes a permanent obsession before the settlement of the case is reached and the after-life is prone to be that of a miserable neurotic wreck.

Dilatation of Spinal Capillaries.—Dr. Kinnear, of Albany, said that it does not seem so difficult to ascribe physical basis of railway spine as has sometimes been said. What happens when patients are profoundly shocked seems to be a profound anemia of the exterior body produced by tense contraction of cutaneous capillaries and consequently a forcing of blood into the interior organs and especially into the central nervous system. It is well known that when patients suffer from shock, they are cold all over, and this feeling of coldness is only an index of the fact that as when the skin is affected by cold,

the blood is driven out of the cutaneous capillaries. The result of this state of affairs is a permanent dilatation of the blood vessels in the brain and cord. Hence the activity of the circulation is increased and the functional life of the sensory and motor cells is made more active. There is a constant sense of discomfort and a desire to be doing things with a sense of restlessness; this is the cause of the insomnia that so often follows such accidents. This pathological condition indeed serves to explain all of the abnormal manifestations of the so-called traumatic neuroses.

Classes of So-called Neuroses.—Dr. Flood said that there are four classes of patients who come under the physician's care as the result of railway accidents. In the first class are those who suffer from real organic injury in the central nervous system. In the second, there are the functional cases in which a true neurosis has developed after the accident. In the third class are the malingerers, who, having been in a real accident, pretend to have been injured or pretend to have been much more injured than is really the case. In the fourth class must be grouped a certain number of people who are robbers, who make it a business to go around the country looking for opportunities to have supposed accidents happen and collect damages for them. A number of these cases have been described in which men and women have gone from one State to another making a good living by the collection of damages for accidents that they themselves planned in such a way as to produce supposed traumatic neuroses, but without any serious bodily injury. In the great majority of cases of traumatic neurosis, no common changes have been found in the central nervous system of those who happen to die from some intercurrent disease during the course of their severe symptoms from the supposed nervous injury.

Hypnotism and Disappearance of Symptoms.—Dr. E. B. Angell, of Rochester, said that Dr. Kinnear's suggestion with regard to the permanent dilatation of the capillaries of the central nervous system would not be acceptable to any one who had found by actual observation that he could make supposedly severe symptoms of the traumatic neuroses disappear entirely during hypnotic suggestion. The hypnotic state has no direct influence on the permanently dilated capillaries, but only on the mental condition and imperative idea that is ruling the patient. Many of the symptoms that are observed in damage cases are pure simulation. It is unfortunate that physicians lend themselves to the exploiting of such cases and indeed sometimes suggest further symptoms than those which the patient already complains of as the result of persistent examination and interrogation.

Pelvic Conditions and Nervous Diseases.—Dr. A. L. Beahan, of Canandaigua, said that much more frequently than has been thought, various sclerotic conditions in the pelvis are responsible for nervous disorders in the female. This is true not only for sclerosis of the uterus and appendages, but also for such extrapelvic organs as the appendix. In many cases in the female, probably as the result of constipation that is so common in women, there is the sclerosis of the appendix. He has found in a number of cases that this bears a definite relation to certain menstrual disturbances. It is well known that there may be a vascular connection between the appendix in the female and the uterine appendages, and during the congested period incident to menstruation, if there is any chronic obstruction to the flow of blood, the effect is apt to be noticed. Sclerosis of the reproductive organs themselves, however, is even more seriously and more frequently productive of various neurotic and menstrual manifestations. Low grade inflammations which bring about thickening of the ovarian capsule, yet without producing acute oophoritis are the commonest of these conditions.

Ovarian Manifestations.—Abortive ovulation probably due to some disturbance of blood supply incident to diversion of the circulation by cold or exposure to dampness may produce hematoma of the ovary or small cyst, and these are often productive of further pathological conditions. If they rupture into the abdominal cavity, the roughened surfaces that are left may produce adhesions fusing together portions of the reproductive organs or even occasionally of the small intestines. The development of such conditions produces a very definite effect upon the woman's nervous system and must always be considered whenever other and more obvious causes cannot be found. The means for restoration to health in these cases are sometimes palliative, but oftener surgical and careful consideration is needed in order that the woman may be given the benefit of proper remedial measures.

The Non-Sequitur in Medicine.—Dr. H. A. Fairbairn, of Brooklyn, said that unfortunately there has always been a tendency, which can be observed even at the present moment, to accept theory rather than observation as the basis of supposed medical progress. In the olden times metaphysical speculation invaded the domain of medicine, but even at the present time this has not been entirely superseded. It has been the rule to make assumptions from observations and base inferences thereon, and the consequence has been the disagreement of results and no real progress. Even carefully made observations, when followed by speculation, has nearly always led medicine astray rather than onward. The only thing that gives lasting advance in medicine is the observation of facts. Even if one generation should make false inferences from these, they will be useful for subsequent generations to enable them to establish true medical laws.

Poisoning by Potassium Bichromate.—Dr. Francis Eustace Fronczak, of Buffalo, said that the whole subject of the toxic influence of potassium bichromate is still in obscurity. Altogether less than six cases of poisoning are to be found in the medical and medicolegal literature so far at hand. As a consequence, the case which he has had the opportunity to study seems to make a valuable addition to the medical literature of jurisprudence which is otherwise very meager. He then gave details of the case in which an attempt had been made to kill a woman by mixing a large amount of potassium bichromate with a mixture of wine and alcohol. As a matter of fact the woman seems to have taken over 100 grains of the drug. The usual dosage given in books on the subject is from 1/12 to 1/2 a grain as quite sufficient to produce certain definite physiological effects. The toxic dose of bichromate is considered not to exceed at the most a few grains. Notwithstanding the fact that the woman took about 100 grains, she recovered without serious inconvenience. It would seem that the mixture of alcohol and wine proved sufficient to act as a neutralizing stimulant in preventing the toxic effects.

(To be Continued.)

JOHNS HOPKINS HOSPITAL MEDICAL SOCIETY.

Regular Meeting, held November 21, 1904.

Experimental Streptococcus Arthritis.—Dr. Rufus I. Cole reviewed this subject and reported some work he had done during the past year with the purpose of throwing some light, if possible, on the nature of the arthritis of rheumatism. The tendency, he said, was nowadays to regard acute articular rheumatism as an acute infectious disease and the following four theories had been advanced to explain the condition: (1) Rheumatism is due to a specific organism as yet unknown. (2) It is due to a specific diplococcus or streptococcus. (3) It is a mild pyemia resulting from infection with the ordinary streptococci or staphylococci. (4) It is due to an ordinary bacillus. Those who have argued for the specific nature of the disease have been able to isolate a diplococcus from the joints, the heart's blood and the exudates of many cases. Meier, noticing the close connection between angina and rheumatism, has been able to isolate from the throats of anginal patients streptococci which produced acute articular rheumatism in animals. Mentzer has held that the angina and the anginal rheumatism, in these cases, were due, not to a specific organism, but to the ordinary parasites of the mouth, most often to streptococci. Diplococci have, however, been isolated from many cases (most often from severe ones) the most recent report having been that of Lewis, of Philadelphia.

The Specificity of the Diplococcus of Rheumatism.—Dr. Cole said that those who claimed, for the organism isolated a specific nature based this claim chiefly on its morphology. A paired coccus, sometimes in chains, the pairing being most marked in recent cultures and the general features quite similar to those of the streptococcus—these were its main characters. Marmorek's test was said not to be reliable in classifying the organism; and the dark discoloration in growth on blood agar, at one time thought to be characteristic, was said to occur also with other organisms. By inoculation of the organism isolated the production of arthritis, of endocarditis and of chorea had been reported.

Experimental Arthritis.—Dr. Cole's own work was begun with a streptococcus isolated from the blood of a patient suffering with endocarditis, septicemia and joint pains. Inoculations were made into the ear-veins of several rabbits and an arthritis was produced in practically every case. Another series of experiments was then carried out in which streptococci were used for the inoculations taken from patients suffering with various non-rheumatic conditions and giving no rheumatic history. Six races of streptococci were thus used, no one of them being the streptococcus of rheumatism. In practically all of the rabbits so inoculated a typical arthritis was produced. The English technic was followed—an emulsion of the culture being injected into the ear veins. The rabbits first became somewhat languid and later became lame, first in one joint and then in another. At autopsy a thick, tenacious fluid was found in some joint of the body and here the cartilage was smooth but the synovial membrane injected. Smears from the exudate showed large numbers of diplococci with flattened sides. In two rabbits a typical endocarditis developed and two showed twitching, incoordinated, possibly choreic movements. In other words, with streptococci from seven different sources results followed inoculations identical with those following inoculations of the so-called diplococcus of rheumatism, and the latter is therefore not specific. Dr. Cole called attention to the fact that the cases reported in the literature as having furnished specific organisms have been usually the severe cases with pericarditis and other complications. This fact, together with the frequency of a secondary invasion of streptococci, argued, he thought, against the specificity of the organism obtained. Dr. Osler mentioned the specimens which Paynter had obtained in his experiments and called particular attention to the significant nature of the experimental subcutaneous fibroid nodules. He felt certain that the disease was an acute infection, but the organism, he thought, still undetermined. Dr. Cole said that Poynter and Paine had been able to get cultures from rheumatic joints but that the attempts made at the Johns Hopkins Hospital had never been successful. Philip, who has reported elaborately on the subject, has also never succeeded in growing organisms from rheumatic joints. Dr. Bloodgood said that it had recently been noticed that in cases in which no organisms could be found in arthritic exudates, the villi of the joint (particularly in gonorrheal cases) often contained bacteria.

The Mosquitoes of Maryland.—Dr. Kelly exhibited a case presented to him by Professor Smith, of Rutgers, in which the commoner varieties of mosquitoes—male, female and larval forms—were beautifully mounted. He asked that further work be done to find out what forms infested Baltimore and to eliminate the malarial bearers if possible. Dr. Thayer said that the work done thus far on the subject showed that three forms of *Anopheles* were common in Maryland; the *maculipennis* or *claviger*, the *punctipennis* and the *crucians*. The main source of the mosquitoes of Baltimore was said to be the drainage wells which very often go uncleaned for years.

Multiple Carcinomata of the Ileum.—Dr. Bunting showed the specimens from two cases of this condition. Primary malignant epithelial tumors of the small intestine were, he said, exceedingly rare. Only one has previously been seen in the Johns Hopkins Hospital and only thirty could be found by Lubarsch in the whole literature. The first patient reported was a negro who had died with cardiovascular symptoms. In the upper ileum six nodules were found which turned out, on section, to be carcinomata with alveoli consisting of small polymorphous cells and a firm fibrous stroma with hyaline degeneration here and there. The tumors, though they answered only two of Billroth's requirements, were probably all primary. These tumors, and the ones reported in the literature, have been similar—were small, occurred well along in the carcinoma age, grew slowly and were relatively benign. They resembled the small skin carcinomata seen on the scalp and arising from the Malpighian layer (the Basalzellen Karzinom of Krohnpeker). The second patient showed symptoms of obstruction and a palapable mass in the right iliac fossa. Inoperable carcinoma was found at operation and a colostomy was done. Autopsy showed multiple primary carcinomata of the small intestines with no peritoneal involvement. Dr. Bloodgood said that these skin carcinomata were more frequently seen than formerly—due in part to earlier diagnosis and in part to a realization by the laity that growths anywhere are not to be neglected. Clinically they were, he said, only slightly malignant and might almost be called benign epitheliomata.

Regular Meeting, held December 5, 1904.

DISCUSSION OF GASTRIC ULCER.

Etiology and Pathogenesis of Gastric Ulcer.—This phase was treated by Dr. Welch, who was, he said, struck with the fact that little of real importance had been added to our knowledge of the cause and development of round ulcer since the appearance of his own article on the subject, twenty years ago. The subject derived interest from the frequency of the condition and the great variety of complications and sequelæ; and it had been almost unique in having been treated so largely by the statistical method, the classical report being the publication of Brinton. The obvious fallacies of statistics were not, however, absent in this connection; and the frequency of round ulcer as determined by autopsy has varied largely with the care of search for it. It has been easy to overlook the scars of ulcers and to assume a round ulcer from a scar due to other causes. Large series of autopsies have shown either ulcers or the scars of them in about five per cent. of the cases. Clinically about one to two per cent. of adults in hospitals have shown the condition, though the incidence of the disease varies with locality.

Age and Sex Incidence of Gastric Ulcer.—The statistics published some years ago had shown round ulcer to be commonest in females from twenty to thirty years and in males from thirty to forty years. Recent statistics had, however, tended to restrict the enormous preponderance in females and in some instances to make the condition actually more frequent in males. Advanced life, also, has recently been shown to be less immune to round ulcer than was formely supposed to be the case.

Etiology of Round Ulcer.—Traumatism, recently emphasized in this connection, was said to be a possible cause more often than had previously been thought. Orth has recently advanced a theory which makes gastric ulcer analogous to cubitus, the condition having been seen in association with spinal curvature and with gall-stones and being thought of as an actual pressure slough. No good explanation for the disease has been given though there have been many hypotheses. It has been agreed that the presence of gastric juice is essential, for the ulcer occurs only in stomach, duodenum above the ampulla of Vater and, rarely, in the esophagus. No analogue to it has been found in the body, though some have thought it similar to the corroding ulcer of the uterine cervix. Whatever the ultimate explanation, local nutritional disturbance must be present; and circulatory changes (embolus, thrombosis, arterio-sclerosis, obliterative endarteritis) have, since Virchow's day, been thought of as causative. Such pathological changes have often been present near the ulcers but their causal relation to them has not been proven. Klebs has advanced a theory of spasm of the vascular wall as the cause of gastric ulcer; but the theory has not become anything more than pure hypothesis. Spasm of the muscle wall, followed by ischemia, has also been thought of in this connection, experimental ulcer having followed section of the vagi below the diaphragm in rabbits. This work, however, when repeated by Donati gave absolutely negative results. The probability is that gastric ulcer starts in many ways; the only prime requisite being a local nutritional disturbance. The real problem: Why an ulcer does not heal? has always remained unsolved; anemia, hyperacidity and muscle-spasm having each been cited as the cause of the phenomenon, without good reason. Dr. Welch showed specimens of gastric ulcer illustrating various varieties and sequelæ of the condition.

Symptomatology of Gastric Ulcer.—Dr. Campbell Howard reviewed the manifestations of round ulcer as illustrated by the cases seen at the Johns Hopkins Hospital. Vomiting, pain and hematemesis had been the cardinal symptoms and had occurred in about the relative frequency usually reported. Pain was usually referred to the epigastrium, its site bore no relation to the site of the ulcer, and it varied from a discomfort to an acute colic. It was rarely continuous, was most marked after meals and was usually increased by pressure. In some patients it occurred independently of meals but most often it was greatest after the ingestion of food and the series exemplified the truth of Gerhard's maxim: "Those who refuse to eat because of pain have gastric ulcer." Vomiting was present in about 85 per cent. of the cases. It occurred at the height of digestion or just after the ingestion of food and varied noticeably with the severity of the pain. In some cases it was provoked for relief. The blood vomited was usually bright red but the coffee-ground vomitus was noted in two-thirds of the cases. In some cases fatal hemorrhage occurred without physical signs (of hemorrhage foudroyant of the French). Blood, Dr. Howard said, would be found in the stools more often if more carefully looked for. Nausea was usually absent. Dyspepsia due to hyperacidity, constipation and retention of appetite were usual. Loss of weight occurred in 54 of 82 cases—9 showing a loss of 40 lbs. Epigastric tenderness was often felt and sometimes tenderness or pressure over the back. A mass (due to abscess, perforation, exudate or scars) was present in twenty cases of the series. Only 27 per cent. of the cases showed hyperacidity and in nine hydrochloric acid was absent—seven of these showing the presence of lactic acid (due possibly to stagnation of food). The blood showed a chloranemia similar to that of carcinoma.

Complications of Gastric Ulcer.—Fatal hemorrhage occurred in 8.5 per cent. of the cases, perforation in 3.6 per cent. Obliteration of the liver dulness without ascites was said to mean perforation. Parotitis, tetany, perigastric adhesions and ulcus carcinomatosum were also seen.

Varieties of Gastric Ulcer.—The cases were divided into the acute and chronic types. Two classes of the former were distinguished—the primary (acute perforative) and the secondary (occurring in infectious diseases, heart disease, etc.). Five classes of the chronic type were recognized—the gastralgic, characterized chiefly by pain; the catarrhal, by vomiting; the hemorrhagic, by presence of blood; the cachectic, by wasting without gastric signs, and the dyspeptic, by the latent course.

Diagnosis of Gastric Ulcer.—This, said Dr. McCrae, is easy in the typical and difficult in the atypical cases. A large number of the cases are latent and cannot be diagnosed. Microscopical examination of the vomitus for blood should always be made. Similar conditions from which gastric ulcer must be differentiated are gastric neuroses (in which pain is not constant and gastric analyses negative), gall-stone, gastric crises of locomotor ataxia, and all the acute abdominal conditions. In the chronic cases the diagnosis from cancer offers most difficulty. A constant hyperchlorhydria speaks for ulcer.

The Medical Treatment of Gastric Ulcer.—The case should, Dr. McCrae said, always be regarded as a possibly surgical one from the start and nurses and attendants warned to be on the watch for dangerous symptoms. Rest in bed for four weeks or longer, absence of irritation to the stomach and the provision of as good a blood supply as possible, were said to be the principles of treatment. All food should be stopped by mouth for from four to six days. Liquid nourishment, preferably whey or peptonized milk, should then be given for ten to fourteen days. One quart should be given per day and this should be diluted with alkalis. The diet should then be gradually increased, a soft solid diet being reached at the end of four weeks. Atropine, large quantities of alkali, bismuth, silver nitrate and olive oil were also said to be of use. Lavage, though not necessary as a routine, was said not to be contraindicated. The patient's diet should be carefully watched, even after he recovers. In chronic cases the treatment was said to be the same,—surgical interference being demanded when doubt exists as to the presence of malignancy and when repeated hemorrhages occur. For the pain, bromides, codeine and morphine should be used.

Surgical Treatment of Gastric Ulcer.—This subject was treated by Dr. Finney. He spoke first of the interest of gastric surgery and said that it was synonymous really with the surgery of the early and late features of gastric ulcer. It also illustrated the recent tendency of the internist and the surgeon to get together—the former realizing his limitations and the latter his possibilities. For the hemorrhage, the surgeon could not do much, on account of the inaccessibility of the bleeding point; and the early cases should be left to the physician. Later exploration was indicated, but little could be done beyond drainage. If hemorrhage was frequent, a jejunostomy and intestinal feeding were indicated. In perforation surgical treatment has been satisfactory when the cases have been seen early. Rapid cleansing, as slight insult to tissue as possible and closure without drain were the steps of procedure in early cases. For stenosis that operation was said to be best which disturbed relations as little as possible, and pyloroplasty was said to answer this requirement. For the remote conditions (dilation of stomach and the late train of neurotic symptoms) gastroenterostomy and pyloroplasty have proven useful. As a rule, the more found at operation the greater has been the relief the surgeon could give. Dr. Pancoast reported a case of perforating gastric ulcer who was jaundiced and showed bile in the urine. At operation a large amount of free bile was found in the peritoneal cavity.

NEW YORK STATE MEDICAL ASSOCIATION, NEW YORK COUNTY BRANCH.

Regular Monthly Meeting, held December 19, 1904.

The President, Francis J. Quinlan, M.D., in the Chair.

The regular scientific business of the evening opened with an address by Dr. Constantine J. McGuire in memorial of the late Dr. William R. Pryor.

Dr. Pryor Memorial.—Dr. McGuire said that Dr. Pryor had been well above the average as a student and besides being distinguished in athletics at Princeton. He graduated from the College of Physicians and Surgeons in 1881. A few years later he became associated with the Polyclinic where he became a full professor of gynecology in 1895. While still a comparatively young man, he obtained a position at the Charity Hospital and was one of the moving spirits to bring about the needed reforms in that institution and to make the commisioners of health realize that more money must be spent on the medical and surgical department, if the poor were to be properly treated. He was an indefatigable worker for the City Hospital and often on cold wintry nights would sometimes go in a rowboat to see patients whom he had operated on during the day, not infrequently bringing with him delicacies for the sick not provided by the ordinary hospital dietary. The work for which Dr. Pryor will be known in gynecology consisted mainly of his development of the vaginal route as the principal avenue for the performance of most gynecological operations. He has done more to bring about the present favor in which vaginal operative gynecology is held than almost any other man. He will be long remembered for the introduction of the operation of bloodless hysterectomy, which he developed with wonderful technical skill and patient devotion to the problems involved. In recent years he had been occupied to no inconsiderable extent with the problem of puerperal sepsis and his suggestion of the employment of iodoform has borne more fruit in the saving of life in this awful disease than any other therapeutic method that has been suggested. He died, bravely facing the end, knowing that it was coming, realizing that that relentless foe to humanity, pernicious anemia, had a death-grip on him, containing his calmness and even his good spirits until the very end. Few men have been more worthy of their great profession than Dr. William R. Pryor.

Leucemia Treated by the X-rays.—Dr. Arthur Holding described a series of cases of leucemia treated by means of the X-rays. Altogether up to the present time 45 cases have been described in literature which have undergone this treatment, and while practically all of them have been improved, some have been cured. Cure is not considered to have taken place until the myelocytes have disappeared from the blood and the tumors have gone and not returned for several months. In only a few cases has the spleen decreased to normal. Many cases improved for some time and then after a relapse a fatal issue became inevitable. The general impression, however, that can scarcely fail to be gathered is that this method of treatment is not only well worth trying, but that it represents the most effective therapeutic measure at present at command for these otherwise inevitably progressive and fatal diseases.

Illustrative Cases, *Case I.*—The first case was one of splenomyelogenous leucemia in an Austrian male, aged thirty-five years. In 1903, this man noticed an enlargement of the glands under his axilla. Under the use of an ointment, these enlarged glands disappeared. Later, however, enlarged glands appeared above the clavicles. Then systemic symptoms began to develop. He suffered from night-sweats quite frequently and there was some cough, especially in the morning with white and frothy mucus. He began to lose in weight and especially the subcutaneous fat diminished. His postcervical glands now became enlarged, and the enlargement of his axillary glands recurred. His epitrochlear glands could now be felt, and it was very evident on examination that none of the glands involved an

inflammatory condition, since they were all perfectly movable beneath the skin. After the use of tonics, cod liver oil and other means had failed, he was given X-rays on a number of occasions and the tumors disappeared. There was a corresponding improvement in his general condition and also in his blood condition.

Splenomyelogenous Leucemia, *Case II.*—This case occurred in a German woman whose first symptom was a sense of intense fulness in the abdomen shortly after eating. She suffered from malaria, but had never had either tuberculosis or syphilis. She noticed that starchy food or anything that produced gas in her stomach gave rise to great shortness of breath. There was a heavy weight bearing down upon her left side, and she feared the growth of a tumor. In February, 1903, physical examination showed an enormously enlarged spleen filling almost the entire left half of the abdomen. At this time the blood count showed somewhat over 3,000,000 reds and 326,000 white blood corpuscles. The myelocytes represented 25 per cent. of this number. She was treated by cathartics and intestinal antiseptics, by hydrochloric acid and Fowler's solution and quinine, but without any effeet until after the X-ray seances were begun. Almost at once improvement set in and the spleen became very much reduced in size. At the present time after some 30 treatments, the spleen has retired behind the border of the ribs and is not palpable, though it is still enlarged. Her blood condition has returned almost to normal. Indeed the red cells are in normal number and so is the amount of hemoglobin. There are still, however, some 30,000 white cells in each cubic millimeter. The differential count is much more encouraging now than it was before. At the present time the myelocytes number only six-tenths of one per cent.

X-ray Bath.—In opening the discussion Dr. E. B. Finch reported a case of splenomyelogenous leucemia in which the patient had been treated by complete exposure to the X-rays with the exception that head was covered with tinfoil. The result was a rapid reduction in the size of the tumor and an immediate general improvement in the patient's condition. With regard to the use of the X-rays for this condition, it is especially important to persist in its use and not to fear possible evil results. Sometimes it happens that while an X-ray burn is healing, the process of improvement in the blood condition seems to go on without interruption. In one case in which an enormous spleen was present, reaching far below the umbilicus, improvement was brought about by means of the X-ray treatment, though there had been copious hemorrhages and all hope was practically given up. The patient suffered from great pain, so that he had to be carried up. After the fifth X-rays exposure he was able to walk up. A year ago he left, very much improved in health and the improvement has continued ever since. In his case exposures had been made with the most powerful X-ray tubes for ten minutes in front, ten minutes at the back and ten minutes on the sides. High tension tubes were used, as a rule, because it was found that low tension tubes did not produce the desired result. It was found also that the low tubes produce burns quite as readily as the other. The X-rays must be used to their physiological limit. If the physician is to secure the best results, he must take a certain amount of risk in his treatment. After all, the disease is usually considered to be fatal and therefore risks are perfectly justifiable.

Reduction of All Enlarged Glands.—Dr. Finley R. Cook said that all enlarged glands responded to treatment by the X-rays, even in cases in which the enlargement was due to tuberculosis and already the glands had become soft and even where there was a mixed infection. Enlargement of the thyroid glands were also favorably affected. Simple goiter, for instance, was made to disappear after six weeks' treatment consisting of three treatments per week. In Graves' disease, the thyroid gland became lessened in size and many of the nervous symptoms disappeared. Even when the enlargement of a spleen was due to malaria a reduction in its size followed exposure to the X-rays. Dr. Cook considered that the most fruitful aspect of the use of X-rays for enlarged glands must be as a preventive wherever a tendency to glandular hyperplasia was noted. In this way it seems not unlikely that glands might be kept from becoming malignant even though the original tumor was beginning to give off metastases.

X-ray and Hyperplasia.—Dr. Charles Warrenne Allen said that so much had recently been said against the X-rays that it was a pleasure to hear something favorable to them. In his own experience the X-rays had often proved a very valuable curative agent. As a result of their use in many affections, diseases formerly considered incurable were now known to be curable. He has been able not infrequently to cause tumors of the spleen to disappear and he has no doubt that further experience with the X-rays will show them to be of service in still further affections where their beneficial effects is as yet unsuspected.

Lymphatic Leucemia.—Dr. Grad said that he had recently had under his care a man nearly seventy years of age suffering from lymphatic leucemia of an acute type. This disease usually does not take long to bring the patient to a fatal issue. He was not able to save life, yet before death came, all the glands had been made to disappear and the spleen had become less in size. Forty-one exposures had been given in this case without producing any dermatitis. Systemic effects had been noticed and a high temperature had been noted as the result of the absorption of toxic material from the rapidly breaking down glands. In Hodgkin's disease, much better results may be expected and even a permanent cure is not out of the question.

In closing the discussion, Dr. Holding said that so far there are no reports of cases of cures of lymphatic leucemia. There is no doubt, however, that some benefit accrues from the use of the X-rays even in these cases. In splenomyelogenous leucemia and in Hodgkin's disease better results may be constantly looked for and indeed in some cases patients have remained entirely well for nearly two years after treatment.

Abuse of Water Drinking.—Dr. Morris Manges said that in recent years it has become the custom, almost on general principles, for physicians to recommend people who come to them for advice, to drink plentifully of water. It is supposed to flush out the system and is not likely to do any harm. Good authorities have protested recently against the possibility of serious danger from the taking of greater quantities of water than can be readily eliminated, especially in persons laboring from kidney and heart disease. In Von Leyden's text-book of the dietetic treatment of the disease and in Von Noorden's text-

books on nutrition and metabolism especially with regard to nephritis, the dangers of overmuch water are pointed out. It is true that when more water is taken more is usually eliminated and a greater quantity of urea escapes from the system, but this is only for the moment, and later on, while the urine may remain abundant, it drops as regards its solid contents, and the consequence is that there is much elimination work without a corresponding removal of effete material.

Water as a Diuretic.—It is sometimes said that water is the best diuretic that we have. It must not be forgotten, however, that this is only true when water increases the blood pressure in the kidneys. On the other hand, the taking of an abundance of water leads to obesity because with an abundance of liquid, more food is likely to be taken and always more food is absorbed. In heart diseases an abundant supply of water may thoughtlessly increase the embarrassment of the heart by giving it much more fluid to drive through the circulation. It is only a popular delusion then that the more water a person drinks the better, though even by most physicians to doubt the advisability of kidney flushing is considered a rank heresy.

Method of Restriction.—When in the course of a chronic nephritis the heart has become incompetent, it is especially important to limit the amount of liquid taken. It has been suggested by German physicians that the patient should be carefully instructed not to take more than a quart of liquid at the most in a day. One day in a week, however, he may be allowed all he wants and this will serve the purpose of flushing out material that should be eliminated while not unduly increasing the work of the heart. In cases of contracted kidney, fluids must be restricted with special care, though of course in these cases, the occurrence of ascites is usually of itself a sufficient indication of a necessity for liquids. The value of a dry diet in heart disease can be readily recognized in most cases and should be considered to be a much more frequent indication than the abundant use of water. Especially is this true with regard to ice water.

Effects of Water.—Water in large quantities was supposed to have especial effect upon metabolism. It was thought even to help albuminous chemical processes within the body. This has been shown not to be true, and it has also been demonstrated that it neither decreases the amount of uric acid manufactured nor causes that material to disappear faster than would otherwise be the case. Minkowsky has shown that the old tests by which such advantages were claimed for water, did not give proper information when the urine was dilute. It seems clear therefore that small quantities of water, somewhat frequently repeated in order to allay thirst and prevent discomfort, are better for most kidney and heart patients than too free use of water.

Laying the Ghost of Flushing.—Dr. Simon Baruch said that Dr. Manges was to be congratulated on daring to lay the ghost of the flushing of the system by means of water. Water internally produces the same effect as water externally. Cold water externally applied will revive a fainting patient. If the person were very weak, however, and were put in a tub of cold water, collapse would almost surely follow. In the same way small quantities of cold water internally are similar. If about every two hours two to four ounces of ice water, that is water at about 40 degrees, be given, patients are distinctly stimulated. This is especially true for the urinary secretions. The increased urination may go as high as 80 ounces per day. On the other hand it is dangerous to flush out whenever the heart is overburdened or when, as at the end of infectious diseases, it has suffered severely from the strain of the continued febrile processes in the body for several weeks. Of course when much water is leaving the body, as in cholera, then an abundant use of water is especially indicated. After hemorrhage also large quantities must be taken. In general, however, it must not be forgotten that water is not an entirely harmless agent and that it must be used according to the indications of each individual case.

Individualization.—Dr. Alfred Meyer said that even in health an excess of water may work harm, but so also may an excess of anything else however good in itself. The present fad is for insisting on the eating of eggs in the early stages of consumption and he has seen not a few cases recently in which patients' digestions were hurt by an irrational use of so good an article of diet as eggs. With regard to the use of table waters, physicians need to warn patients who have suffered from angina pectoris, not to use much carbonated water, since during the course of the liberation of gas from such water mechanical interference with the heart's action may result. In general, for patients suffering from heart and kidney disease, it is important to note the effects of water drinking upon each of them. No general rule can be laid down. Each individual is a law unto himself. If an abundance of water seems to be helpful to the patient, as it often is, if there is costiveness present, or an insufficient amount of urine has been passed, then it may be continued. Its effect, however, must be constantly noted.

Water in Fevers.—Dr. Beverley Robinson said that in continued fevers, such as typhoid, he believes in the giving of water frely. Patients crave water very much and suffer much less discomfort if it is allowed them. He does not believe that the heart is injured in such cases and Debove's statistics of typhoid fever patients treated by large quantities internally show excellent results with this method. In acute nephritis, Dr. Robinson considers that the amount of fluid given should be very limited. In chronic nephritis, however, it is a matter entirely with the individual and more often than not, except where there is a tendency of anasarca, the use of water freely will be found to be beneficial rather than harmful.

Dr. Ransom said that no better stimulant to metabolism and chronic conditions can be found than the free use of water. He would not care to forego it, except where there were distinct contra-indications in a special case. It has been pointed out that it is of great use in all digestive processes, even in the saponification of fats in the intestines. Large quantities of it may be employed in many affections with gratifying results.

Chronic Nephritis.—Dr. Manges, in closing the discussion, said that the most important contra-indication to the use of water very freely is chronic nephritis. Undoubtedly there has been an abuse of it in this matter. Almost any patient who comes with the story of having suffered from chronic nephritis will be found to be using lithia or other table waters in large quantities by the prescription of his physician. In general it may be said that the important rule is to watch the quantity of urine passed and to see whether the water ingested is

finding its way out of the system and is not being retained to increase the tension of the circulation and make the metabolic processes within the body more difficult than before. This is especially important in the continued fevers. Two-thirds of the water ingested should find its way out of the kidneys, and if it does not, it is accumulating within the system. If the water does not come out, the cause for such disturbance of elimination must be looked for and if possible removed. Of course it is important to treat the cases individually according to the indications in each case. Some patients are benefited by small amounts of cold water given frequently, some derive more benefit from even large quantities of water.

What Dr. Manges would protest against, however, is the inconsiderate giving of the advice to drink water freely in nearly all cases of kidney disease and in many other cases where it may be contra-indicated. It is not true that at least the water can do no harm. Large quantities of water may work serious harm in ailing persons. Here, as in everything else, the physician must use his intelligence and the knowledge gained from clinical observation in order to guide him in the use of this valuable remedy for various types of disease. There is no general rule for this any more than there is for anything else that is likely to do the patient good.

MANHATTAN DERMATOLOGICAL SOCIETY.

Regular Monthly Meeting, held December 2, 1904.

The President, I. P. Oberndorfer, M.D., in the Chair

Pruritus.—Dr. J. Sobel presented the following case: A woman, about fifty years old, complained of pruritus over the body at varying intervals for the past five years; since July last patient is taking occasional doses of cannabis indica and steadily 15-grain doses of natrium bromide t.i.d. Ten days ago patient noticed large papules and nodules along the tibiæ and on the feet; also a few nodular masses on the arms; the body is clear; the nodules involve subcutaneous tissue as well as the true skin. Owing to violaceous color and situation, Dr. Sobel at first thought he had to deal with an erythema nodosum; subsequently he changed his diagnosis to a bromoderma. There was no history of rheumatism, the joints are not involved and the urine is negative. Drs. Cocks, Kinch and Ochs said history favored diagnosis of bromine eruption; Dr. Gottheil inclined to call it erythema nodosum; Dr. C. W. Allen said it looked like an erythema nodosum, but there was a type of bromine eruption much resembling the eruption of an erythema nodosum. He thought this such a case; at least history favored such a diagnosis. Dr. Oberndorfer said the history in this case was suspicious of a possible connection between the eruption and the administration of bromine; he tends to side with Dr. Gottheil. Dr. Sobel, in concluding, quoted "Morrow" on a type of bromine eruption resembling and often mistaken for erythema nodosum.

Syphilis.—Dr. W. S. Gottheil presented two cases of tertiary and intractable syphilis, both exceedingly obstinate and rebellious to treatment. Case I was a gumma involving the upper lip and adjacent nasal structures; in spite of heroic treatment condition does not improve; patient states his body was never at any time perfectly clear since he contracted the disease, nearly twenty years ago. Case II was a large infiltrating gumma of the lower tibial region. Dr. Pisko spoke favorably of daily injections of bichloride. Dr. Kinch said tonic treatment must also be given in these cases; he saw better results and Hg. and K. I. seemed to work better when tonic treatment with iron was inaugurated. Dr. Oberndorfer favored inunctions.

Chronic Onychia.—Dr. J. Sobel then showed a child with a chronic onychia, involving the finger nails, also, to a lesser extent, the toe nails; there was a history of thumb-sucking and nail-biting; the condition involved the nail-bed and surrounding cuticle.

Lupus Vulgaris.—Dr. Edward Pisko showed a case of lupus vulgaris; condition present for thirty years and treated abroad and here; treated with Koch's tuberculin with negative results, and under all and every kind of treatment likewise no result. Recently X-ray therapy was inaugurated; in all 45 exposures given since last May, with very gratifying results. Dr. Pisko exhibited photos of patient taken before X-ray exposures were begun; the results are very striking and encouraging.

Tuberculous Syphilide.—Dr. E. L. Cocks presented a young woman showing papular and nodular lesions on the face and neck. Patient does not deny exposure, but no lesions of a recent or remote infection can be made out; patient states she had a similar eruption on face about six months ago, which disappearing left small atrophic scars. The alæ nasi folds show fissures. The present eruption is of three weeks' duration. Dr. Cocks believes it to be specific. The members regard the eruption as a tuberculous syphilide.

Pityriasis Rosea.—Dr. B. F. Ochs showed a young woman with a typical eruption of pityriasis rosea on the body of ten days's duration; the mother lesion is well seen on the sternum; scalp shows slight seborrhea sicca. Dr. L. Weiss regards the eruption of pityriais rosea as belonging to the erythematous diseases, non-parasitic and probably of internal origin, depending upon gastric disturbances or internal fermentation. He failed to find any micro-organism and therefore excludes it from the mycotic diseases; the clinical picture and course was totally different from true tinea circinatus et maculosum. Dr. Abrahams stated he was not yet convinced that pityriasis rosea was not of mycotic origin; failure to find microbe proves nothing. Dr. Allen still believes in its parasitic origin, although he cannot offer any new substantial proofs. It is distinct from ringworm; the latter is mycotic, the former may be; acute attacks occur over night, due to errors in diet, and he saw an alcoholic who was sure to get an acute outbreak whenever he stopped drinking. Dr. Oberndorfer said ringworm begins as a macule, spreads and heals in the center; pityriasis rosea as a primitive plague, with secondary squamous lesions; at one time both diseases were confounded and classified as the same disease.

Dr. Edward Pisko presented a young man showing squamous circinate lesions on the body of eleven days' duration and shown as the circinate type of pityriasis rosea. Drs. Weiss and Gottheil regard this case as tinea circinatus. Dr. Allen said it may be pityriasis rosea; the case will bear further investigation.

Dr. W. S. Gottheil then presented a girl of fourteen years, with so-called spontaneous outbreaks (consisting of scratch marks and excoriations) on the arms, legs and face; the first lesions were observed by the mother at the time of the girl's first menstruation. Dr. Gottheil is of the opinion that these lesions are self-induced by patient, and in this respect resembled a case presented to the society about one year ago.

Impetigo Circinatus.—Dr. Pisko showed a young man with eczematous lesions on little finger of right hand and left thumb, also an eczematous patch on right cheek; present about eight months and ex-

ceedingly rebellious to treatment; patient's occupation is that of a clerk. Dr. Gottheil said it resembled impetigo circinatus. Dr. Abrahams thought it was mycotic eczema. Dr. Kinch said it resembled the condition known as dermatitis repens. Dr. Allen said the fingers were eczematous, probably mycotic in origin; the face lesion may develop into a lupus subsequently. Dr. Oberndorfer expressed his opinion as being neuritic in origin.

Multiple Sarcoma.—Dr. Wachsman showed a case which he termed multiple sarcoma of the skin, basing diagnosis upon microscopical findings. This patient was presented by Dr. Pisko about a year ago. The consensus of opinion expressed was that this case was one of mycosis fungoides; an opinion shared when first presented by Dr. Pisko. Considerable discussion on the differential diagnosis and treatment followed. Dr. Gottheil reported a case of acute lead poisoning following local application of liq. Burrowi to a recent burn.

The following new officers were elected for the ensuing year: President, Dr. E. L. Cocks; vice-president, Dr. J. S. Sobel; secretary-treasurer, Dr. A. Bleiman.

BOOK REVIEWS.

LECTURES TO GENERAL PRACTITIONERS ON THE DISEASES OF THE STOMACH AND INTESTINES. By BOARDMAN REED, M.D., Professor of Diseases of the Gastro-Intestinal Tract, Hygiene, and Climatology in the Department of Medicine of Temple College, Philadelphia; Attending Physician to the Samaritan Hospital, etc.,. E. B. Treat & Company, New York.

THE author has endeavored in this single volume to meet the requirements of the general practitioner in the now extensive field of stomach and bowel disease. He does not follow the usual plan of considering all the diseases of the stomach and then those of the intestines, but, in a somewhat unique and instructive manner, groups stomach and bowels together as one tract. For example, he takes up in one group all their displacements, in another their different ulcers, in another their tumors, then their neuroses, etc. The cases of membranous catarrh he distinguishes as of two types, those strictly neurotic, and those accompanied by more or less enteritis; for their treatment he commends Von Noorden's detailed system of overfeeding and the administration of food which will leave much undigested residue. In discussing chronic gastritis, the writer differs from Cohnheim and some other foreigners, and agrees with Boas, Riegel, Einhorn, etc., that this disease may be manifested by hyperacid stomach contents as well as by subacid. On this basis he divides the cases into the sthenic and the asthenic types. Hyperchlorhydria he looks upon as either an indication of a beginning stage of gastritis, or a manifestation of Reichmann's diseases. In the chapter on Intestinal Parasites he wisely limits himself to the clinical findings, omitting the mass of biological details which are so easily found elsewhere. The section on diseases of the rectum and anus has been written by Dr. C. F. Martin. The following axiom is not without interest: "All fistulas in the neighborhood of the anus or rectum are the direct result of abscesses which have been either neglected or improperly treated." Diet, massage, electricity and gymnasium exercise are given ample consideration, diagnostic methods are detailed at length, and some useful tables of differential diagnosis, as under the headings of cancer and ulcer, are appended. "The Symptomatic Guide to Diagnosis," which the author calls to our special attention, seems to us to have little if any value.

KIRKE'S HANDBOOK OF PHYSIOLOGY. By W. D. HALLIBURTON, M.D., F.R.S., Professor of Physiology, King's College, London. Nineteenth Edition, with nearly 700 illustrations including some colored plates. P. Blakiston's Son & Co., Philadelphia.

THE nineteenth edition of a text-book of physiology shows how well the book must be gotten up and how suitable it is for the purpose intended, that of a guide to the medical student. There is no doubt that for its size, Kirke's handbook is one of the best of the text-books on the subject we have. In its present form with 900 pages, it has somewhat outgrown the designation of handbook, but it has not suffered any loss in popularity by its growth in size. Dr. W. D. Halliburton is to be complimented on the thorough way in which successive revisions are done and the present edition is well up to date. There seems every reason to think that the future of the handbook is likely to be as successful as its past.

REFRACTION AND HOW TO REFRACT. Including Sections on Optics, Retinoscopy, the fitting of Spectacles and Eye-glasses, etc. By JAMES THORINGTON, A.M., M.D., Professor of Diseases of the Eye in the Philadelphia Polyclinic and College for Graduates in Medicine; Member of the American Ophthalmological Society. Third Edition. Two hundred and fifteen illustrations, thirteen of which are colored. Pp. xviii + 314. P. Blakiston's Son & Co., Philadelphia.

IT would be superfluous to review this book in detail; it is as widely and as favorably known as any book of its class, of which fact the appearance of the third edition is sufficient evidence.

This edition shows no important changes; it is still a book for beginners, and one regrets that the author, who is extremely well-fitted for the task, has not allowed the book to advance in the evolutionary scale. It is at present one of rather a large class of books, fairly easy to write and more remunerative than a completer treatise would be, but because it is a little better than most of its compeers, it should naturally advance until it takes precedence, as Donders and Landolt did in their day, and as Hess does to-day in Germany.

BOOKS RECEIVED.

PRACTICAL DIETETICS. By Dr. A. L. Benedict. 12mo, 380 pages. G. P. Englehardt & Co., Chicago.

NERVOUS AND MENTAL DISEASES. Epitome Series. By Dr. J. D. Nagle. 12mo, 276 pages. Illustrated. Lea Brothers & Company, Philadelphia and New York.

MANUAL OF PHYSIOLOGICAL AND CLINICAL CHEMISTRY. By Dr. E. H. Bartley. Second edition. 12mo, 188 pages. Illustrated. P. Blakiston's Son & Co., Philadelphia.

PATHOLOGICAL TECHNIQUE. By Drs. F. B. Mallory and Jas. H. Wright. Third Edition. 8vo, 469 pages. Illustrated. W. B. Saunders & Co., Philadelphia, New York and London.

ANNUAL REPORT OF THE SURGEON-GENERAL OF THE PUBLIC HEALTH AND MARINE HOSPITAL SERVICE OF THE UNITED STATES. 1903. 8vo, 572 pages. Illustrated. Government Press, Washington.

A TEXT-BOOK OF HUMAN PHYSIOLOGY. By Dr. L. Landois. Tenth revised edition. Edited by Dr. A. P. Brubaker. Translated by Dr. A. A. Eshner. 8vo, 1,025 pages. Illustrated. P. Blakiston's Son & Co., Philadelphia.